
ENVIRONMENTAL APPENDIX

NORFOLK HARBOR NAVIGATION IMPROVEMENTS GENERAL REEVALUATION REPORT/ ENVIRONMENTAL ASSESSMENT

VIRGINIA

APPENDIX E1: Biological Assessment U.S. Fish and Wildlife Service

May 2018



**U.S. Army Corps
of Engineers
Norfolk District**



**THE PORT OF
VIRGINIA®**

NORFOLK HARBOR NAVIGATION IMPROVEMENTS

BIOLOGICAL ASSESSMENT

**Submitted To:
Department of the Interior
U.S. Fish and Wildlife Service
Virginia Field Office**

**U.S. Army Corps of Engineers
Norfolk District
803 Front Street
Norfolk, Virginia 23510**

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**US Army Corps
of Engineers®**

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1.0 INTRODUCTION, PURPOSE, AND, NEED

The Norfolk Harbor and Channels consists of a network of multiple channel and anchorage elements that provide two-way, full-width navigation from the Atlantic Ocean into the Port of Hampton Roads. The harbor in which the Port of Hampton Roads facilities are located covers a 25 square mile area and serves the cities of Norfolk, Newport News, Portsmouth, Chesapeake, and Hampton in southeastern Virginia.

The purpose of the Norfolk Harbor Navigation Improvements Project is to improve the operational efficiency of commercial vessels currently using the Norfolk Harbor and Channels from the Atlantic Ocean Channel to the Lamberts Bend and commercial vessels projected to use the harbor in the future. The need for this project arises from inefficiencies currently experienced by commercial vessels in Norfolk Harbor and Channels. These inefficiencies are projected to continue in the future as vessel sizes are expected to increase.

2.0 PROJECT SCOPE

The Norfolk Harbor Project is a single purpose deep draft navigation project that consists of a network of federally improved channels extending from the Atlantic Ocean, through the Chesapeake Bay, and into the Port of Hampton Roads (Figure 1). Since the Water Resources Development Act (WRDA) of 1986, the project has been constructed in separable elements based on the needs of the port community and the financial capability of the non-federal sponsor, the Virginia Port Authority, agent of the Commonwealth of Virginia. The 50 Foot Outbound Element was completed in 1989; the 50 Foot Anchorage in 1999; and 50 Foot Inbound Element in 2007. The authorized project includes a system of two-way, full-width channels to a depth of 55 feet in the Norfolk Harbor and Thimble Shoal Channels and 57 feet in the Atlantic Ocean Channel.

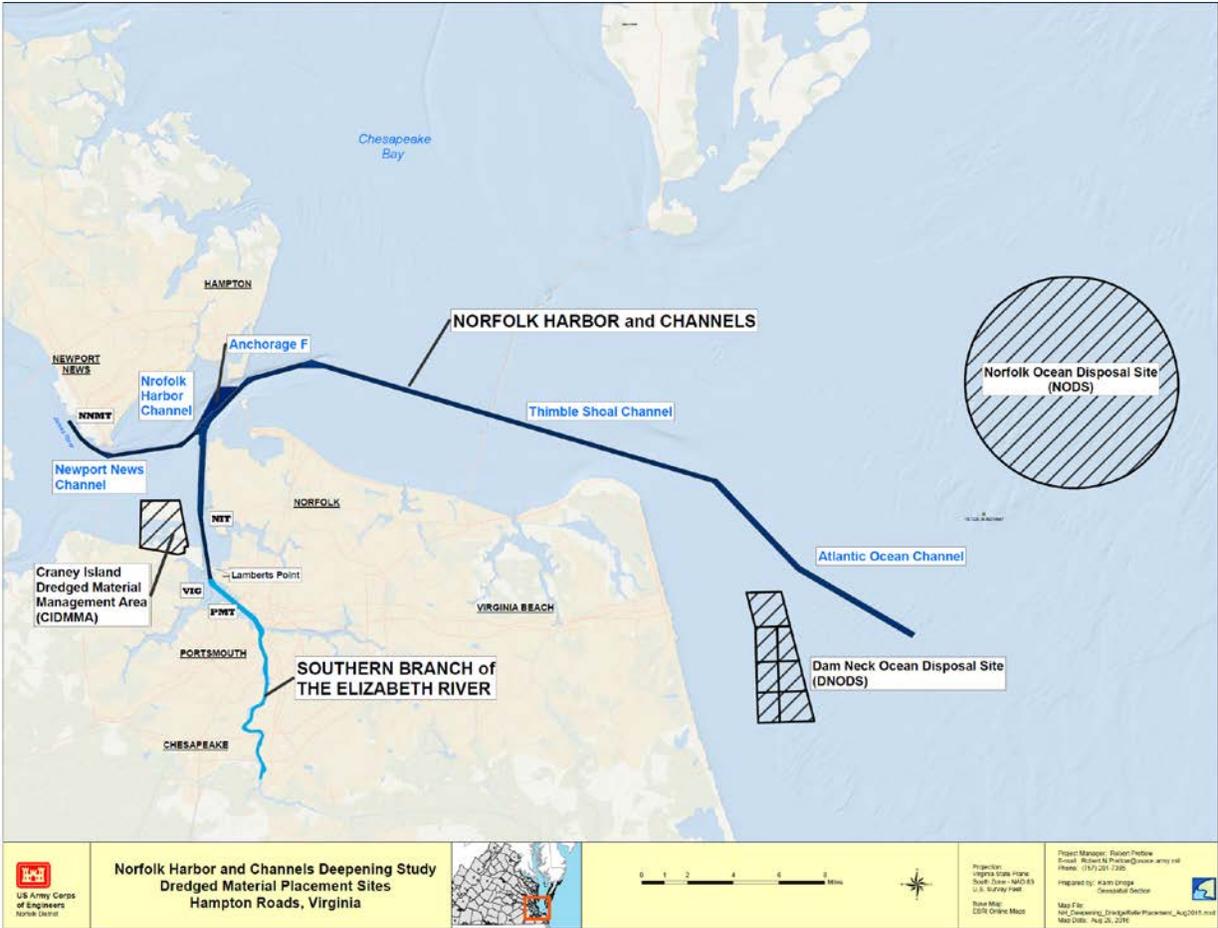


Figure 1. The Norfolk Harbor and Channels from the Atlantic Ocean Channel to the Lamberts Bend is the subject of this Biological Assessment (navy). Location of the Norfolk Harbor and Channels within the Elizabeth River is shown for reference but is not in the Action Area (light blue). Dredged material placement/disposal sites within the Action Area for this project are also shown.

2.1 CURRENT NORFOLK HARBOR PROJECT DREDGING AND DREDGED MATERIAL PLACEMENT/DISPOSAL PRACTICES

Atlantic Ocean Channel

The Atlantic Ocean Channel, off the eastern coast of Virginia (Figure 2), was authorized by the WRDA of 1986. The WRDA authorized the U.S. Army Corps of Engineers (USACE) to construct the Atlantic Ocean Channel which consists of a channel 11.1 miles long, 1,300 feet wide, and 57 feet deep. Please note that depths described in this document are provided in Mean Lower Low Water (MLLW). As part of the 50-foot inbound construction effort in 2006, the channel was deepened to provide for a required depth and width of 52 feet and 1,300 feet, respectively. The Atlantic Ocean Channel is part of the Port of Virginia and Baltimore system of channels, and is the segment providing access for all ships calling on port facilities, naval bases, and shipyards in the Hampton Roads, York River and Baltimore areas. All commercial tonnage entering and leaving the Ports of Virginia and Baltimore pass through this channel. The channel is currently maintained to a full width and a required depth of 52 feet to enable

loaded colliers, container ships and military vessels to transit the channel with ship drafts as great as 50 feet.

Material is typically dredged via hopper dredge from this channel. Dredged material is placed at Dam Neck Ocean Disposal Site (DNODS). Dredged material also has been used for beneficial uses for the Virginia Beach Hurricane Protection project and the Craney Island Eastern Expansion (CIEE) Project. The sediment composition in this channel segment is largely fine sand (85%) with some silt (15%). The channel has been utilized as a sand borrow source for hurricane protection projects and port development projects, therefore maintenance of the channel has not been required.

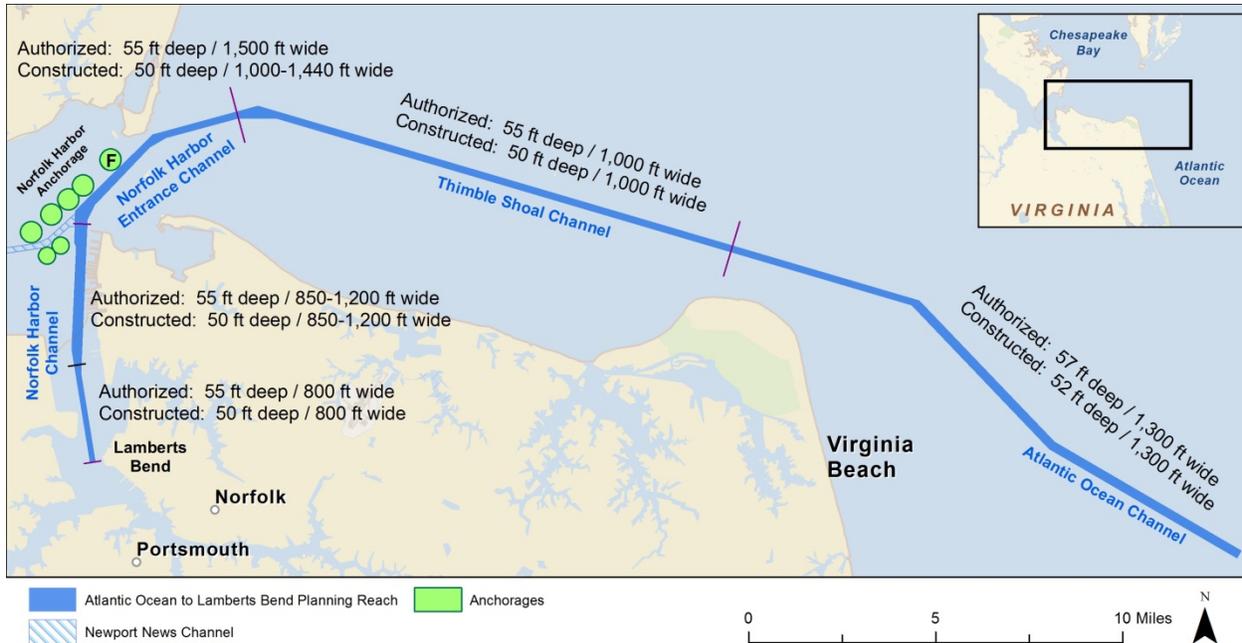


Figure 2. Segment 1 includes the Atlantic Ocean Channel, the Thimble Shoal Channel, and the Norfolk Harbor Channel. Authorized dredging depths and the existing dredging depths that have been constructed to date are depicted.

Thimble Shoal Channel

The Thimble Shoal Channel is located in the southern part of the Chesapeake Bay, just off the shoreline of Norfolk and Virginia Beach, east of the Craney Island Dredged Material Management Area (CIDMMA) (Figure 2). This project was originally authorized by the River and Harbor Act of 1917. The authorized channel dimensions are 13.4 miles long, 1,000 feet wide, between the 55 foot contours, to a depth of 55 feet. Although the channel is authorized to be dredged to 55 feet, the channel is currently maintained to a required depth of 50 feet. Thimble Shoal Channel extends from the deep water to the east of Hampton Roads to the deep water at the mouth of the Chesapeake Bay.

Material dredging is via hopper dredging. Dredged material is placed at the DNODS. The sediments of Thimble Shoal Channel to the west of the Chesapeake Bay Bridge Tunnel are predominantly clays and silts (50-75%). In contrast, sediments in the eastern portion of channel are largely fine to medium-grained sand (75-90%).

Channel to Newport News and Anchorages

The Channel to Newport News and associated Newport News anchorages segment (Figure 3) of the Norfolk Harbor Project is authorized to 55 feet deep by 800 feet wide from Norfolk Harbor Channel in Hampton Roads to Newport News and the Newport News Anchorages. However, the channel is currently maintained to a required depth of 50 feet. Material dredging is via hydraulic and/or mechanical dredging methods. Material dredged from this area is then placed at the CIDMMA.

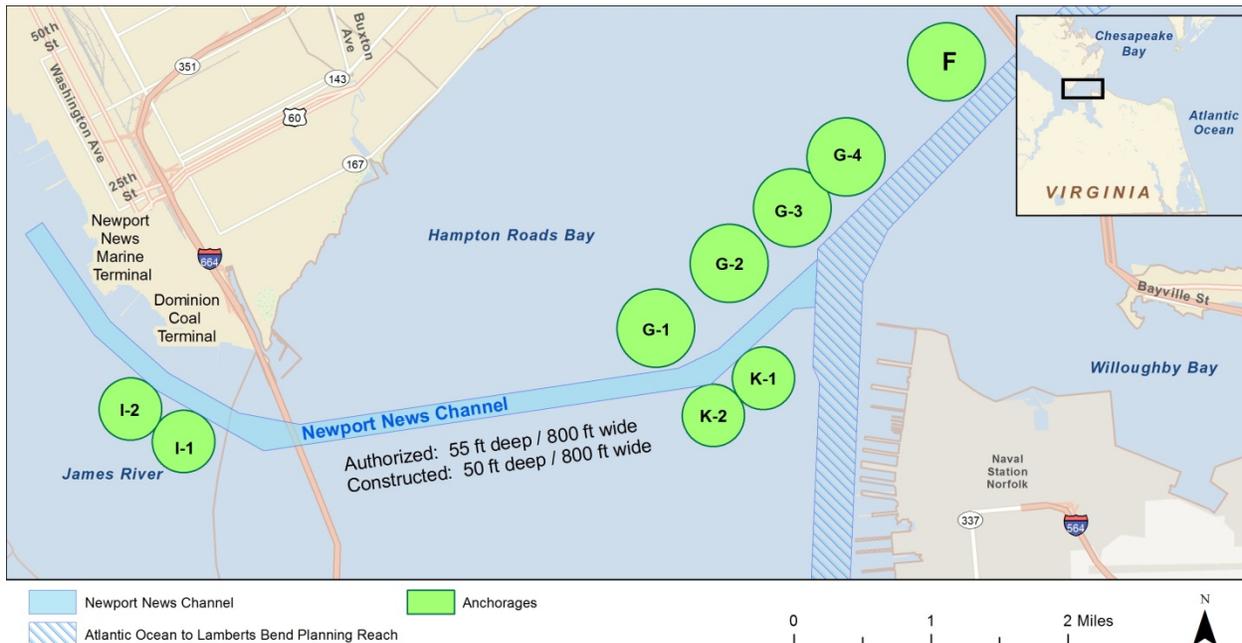


Figure 3. Segment 2 is the Newport News Channel. The authorized dredging depth and the existing dredging depth that has been constructed to date is depicted. Anchorages are also shown for reference. Deepening of Anchorage F is being considered for this project.

Norfolk Harbor Channel - Sewells Point to Lamberts Bend and Norfolk Harbor Anchorages

The Sewells Point to Lamberts Bend reach of the Norfolk Harbor Project is located in Norfolk between Sewells Point and Lamberts Bend. This segment of the project is approximately eight miles long and varies in width between 800 feet to 1,200 feet. This reach also consists of: Anchorage F, Sewells Point East Anchorage (includes the Naval Maneuvering Area and Approach Areas), Sewells Point West Anchorage and (Approach Area), Anchorage G, and all approach areas.

The authorized project dimensions for this reach include a channel 55 feet deep and 1,200 feet wide from that depth in Hampton Roads to a point approximately 6.0 miles upstream from the Hampton Roads Bridge-Tunnel; thence 55 feet deep and 800 feet wide to Lambert Point. The Sewells Point to Lamberts Bend Channel is currently maintained to a required depth of 50 feet MLLW from the 55-foot contour in Hampton Roads (near the Hampton Roads Bridge Tunnel) to Lamberts Point.

Material is dredged from this area via hydraulic cutterhead pipeline dredge and/or a clamshell dredge. Material dredged from this area is then placed at the CIDMMA. The consistency of the dredged material in the Sewells Point to Lamberts Bend Channel is primarily silt and clay

(85%), with some sand (15%). The consistency of the Elizabeth River sediment is predominantly clay in the Town Point area of Norfolk. However, as you travel south along the Elizabeth River (towards Chesapeake), the sediments become increasingly more coarse and sandy.

Dam Neck Ocean Disposal Site

The DNODS is located three nautical miles east of Virginia Beach (Figure 1). The DNODS area was first utilized as an ocean placement site in 1967. This ocean placement site was designated by the administrator of the U.S. Environmental Protection Agency (USEPA) in March of 1988. The DNODS runs parallel to Virginia Beach, covering about eight square nautical miles. Water depths at DNODS vary between 31 to 49 feet deep. The remaining DNODS capacity is estimated to be about 63 million cubic yards. The site is the primary dredged material disposal site for the Thimble Shoals Channel, Cape Henry Channel, and Atlantic Ocean Channel.

Norfolk Ocean Disposal Site

The NODS (Figure 1) was officially designated as an ocean placement site in 1993, pursuant to Section 102 (c) of the Marine Protection, Research, and Sanctuaries Act of 1972 (as amended, 33 U.S.C. 1401 *et seq*). This ocean placement site was designated by the administrator of the USEPA in December of 1986. The site is authorized to receive new work and maintenance dredged material from the lower Chesapeake Bay. This site is also authorized to receive appropriate dredged material from the Thimble Shoal, Cape Henry, Atlantic Ocean Channel, Hampton Roads, and York Spit channels. An Environmental Impact Statement, titled: "Final Environmental Impact Statement for the Designation of an Ocean Dredged Material Disposal Site Located Offshore Norfolk Virginia" was finalized in November of 1992.

The center of the NODS is located 17 nautical miles from Virginia Beach. Water depths near the center of the site vary between 65 to 80 feet. Up to approximately 250 million cubic yard of dredged material from dredging projects (public and private) may be disposed at the site over the next 49 years. The quantity of material to be placed at the site depends on the quality of the dredged material. Only material that meets ocean dumping criteria will be disposed at the designated site. This includes unconsolidated fine to medium grain sands, silts, and clays.

Craney Island Dredged Material Management Area

The CIDMMA is located in the City of Portsmouth in the eastern portion of the Atlantic Coastal Plain and adjacent to the confluence of the James River, Elizabeth River, and Nansemond River, and is in close proximity to the Chesapeake Bay and the Atlantic Ocean. The CIDMMA is a 2,500 acre confined disposal facility in the Hampton Roads area of Virginia. The CIDMMA was authorized by the River and Harbor Act of 1946 and constructed from 1956-1958. The federally owned facility is operated by USACE and is used by private interests, local municipalities, federal and Commonwealth of Virginia government agencies for the disposal of dredged material from Norfolk Harbor and its adjacent waterways.

Dredged material is received in two different ways at the CIDMMA. It is either pumped directly into one of three upland containment cells or it is deposited in the rehandling basin and then pumped into the facility. The Craney Island Rehandling Basin is a large deeper area off the southeast shoreline of the island that can be filled with material and then dredged once filled. Since it began operation, the CIDMMA has received, on average, 3.5 million cubic yards of dredged material per year. However, there have been several years when it has received more than 10 million cubic yards. At present, the USACE estimates that the facility has a

realistic timeline lasting until 2030. However, this may change as newer technologies and/or new management techniques are employed at the facility.

2.2 DREDGING AND DREDGED MATERIAL PLACEMENT PRACTICES FOR THE PREFERRED ALTERNATIVE

This Biological Assessment was developed to describe the potential impacts that could occur to federally listed threatened and endangered species under the jurisdiction of the National Oceanographic and Atmospheric Administration, National Marine Fisheries Service (NMFS) from implementation of the Preferred Alternative. The Preferred Alternative consists of constructing and maintaining the following features:

- Deepening the Atlantic Ocean Channel to a required depth of approximately 59 feet;
- Deepening the Thimble Shoal Channel to a required depth of approximately 56 feet;
- Deepening the Norfolk Harbor Channel to a required depth of approximately 55 feet;
- Deepening the Norfolk Harbor Entrance Channel to a required depth of approximately 55 feet;
- Deepening the Newport News Channel to a required depth of approximately 55 feet;
- Widening the Thimble Shoal Channel east of the Chesapeake Bay Bridge Tunnel to approximately 1,300 feet;
- Widening Anchorage F to approximately 3,620 feet and associated modifications of the Approach Area; and
- Deepening Anchorage F to a required depth of approximately 51 feet.

The Preferred Alternative includes construction and maintenance of these features. Dredged material placement/disposal could occur at the DNODS, the NODS, the CIDMMA, and/or upland disposal sites for this project (if needed). Portions of the dredged areas may be suitable for beneficial use projects and beneficial use projects would be coordinated separately from this project. General operation and maintenance of the CIDMMA will continue with or without implementation of the Preferred Alternative.

It should also be noted that channel deepening in itself may also lead to some side sloping and widening of the channel, however, we would not estimate any of these impacts to range more than approximately 30 feet from the toe of each side of the channel. As optimization of the Preferred Alternative is ongoing, actual project depths and project deepening and widening features may vary slightly prior to construction.

The project also includes general operation and maintenance of the CIDMMA. The project also includes general operation and maintenance of the CIDMMA. General maintenance of the CIDMMA may include activities to maintain the placement/disposal site which include but would not be limited to:

- Integrated pest management practices to control invasive plant species;
- Planting of upland and wetland vegetation to enhance the site;
- Dike raising and other stabilization measures; and
- Maintenance of the breakwaters and shoreline.

The project construction is anticipated to begin in approximately 2023 and following construction, channel depths would be maintained over the 50 year lifecycle of the project.

One important consideration important in the impact analysis is that the actual dredged depths can be deeper than the required channel depths. Required depths do not necessarily indicate the maximum, potential dredging depths which may also include Advanced Maintenance Dredging (1 foot), Paid Allowable Overdepth Dredging (2 feet), and Non-Pay Allowable Overdepth dredging (2 feet) for the Norfolk Harbor Project. Please see Table 1 for an approximate estimate of estimated maximum, potential dredging depths that account for the overdepth and advanced maintenance dredging with implementation of the Preferred Alternative. For the purpose of this Biological Assessment we refer to required depths throughout the text but in terms of the environmental impact analysis (affect determination), the estimated maximum, potential impact depths and dredging volumes will be used (Table 1).

Dredges used for construction and maintenance of the Preferred Alternative would include hopper dredges, hydraulic cutterhead dredges, as well as mechanical dredges. Channel bed leveling equipment may also be used to flatten the channel bottom following dredging.

In the future, with or without implementation of the Preferred Alternative, vessel calls are anticipated to increase as compared to current conditions. However, when comparing the future with or without the project, there would be less vessel calls in the future with project as compared to the future without project because the existing, larger ships in the fleet would carry more goods, thus requiring fewer vessel calls to transport the same amount of goods.



Figure 4. Potential channel widening locations (also referred to as Meeting Area 1 and Meeting Area 2).

Table 1 summarizes the approximate dredging volumes, and durations with implementation of the No Action/Future Without Project Alternative and the Preferred Alternative.

Table 1. Summary of estimated dredging volumes and durations over the lifecycle of the No Action/Future Without Project Alternative and the Preferred Alternative (Action Alternative).

	Required Depth (feet)	Estimated Construction					Estimated Maintenance (50 Years)		Estimated Construction and Maintenance (50 Years)	
		Estimated Maximum Depth (feet)	Estimated Maximum Dredging Volume- all allowable and nonpay (cubic yards)	Estimated Maximum Dredging Duration (months)	Estimated Total Land Disturbance - Maximum (square feet)	Change/Delta (increase) in Land Disturbance - Maximum (square feet)	Estimated 50 Year Total of Maintenance Volume (cubic yards)	Estimated 50 Year Total - Maintenance Dredging Duration (months)	Estimated Maximum Volume-Total Allowable and Non-pay + Maintenance Volume (cubic yards)	Estimated Maximum Construction + 50-year Maintenance Dredging Duration (months)
Alternative										
NAA/FWOP-Segment 1 Atlantic Ocean Channel	52	57	2,152,820	6	76,166,690	0	8,217,950	33	10,370,770	39
NAA/FWOP-Segment 1 Thimble Shoals Channel	50	55	4,371,193	14	114,682,571	0	16,278,850	140	20,650,043	154
NAA/FWOP-Segment 1 Sewells Point to Lamberts Bend	50	55	4,460,147	4	52,664,951	0	36,681,500	68	41,141,647	72
NAA/FWOP-Segment 1 Anchorage F	50	55	210,956	2	24,930,676	0	6,851,800	14	7,062,756	15
NAA/FWOP-Segment 2 Newport News Channel	50	55	1,658,438	1	27,157,981	0	5,481,200	13	7,139,638	14
Total			12,853,553	26	295,602,869		73,511,300	268	86,364,853	295
PA-Preferred Alternative										
PA-Segment 1 Atlantic Ocean Channel	59	64	16,074,736	42	78,738,613	2,571,924	15,191,112	62	31,265,848	104
PA-Segment 1 Thimble Shoals Channel	56	61	18,069,823	57	119,644,916	4,962,345	24,331,540	210	42,401,363	267
PA-Segment 1 Thimble Shoals Channel Meeting Area 2 (1,300 feet)	56	61	3,072,847	10	13,693,000	13,693,000	2,000,744	17	5,073,591	27
PA-Segment 1 Sewells Point to Lamberts Bend	55	60	12,147,318	11	57,012,805	4,347,854	42,346,689	78	54,494,008	89
PA-Segment 1 Anchorage F - 3,620 feet	51	56	2,522,500	19	27,984,077	3,053,401	6,858,836	14	9,381,336	33
PA-Segment 2 Newport News Channel	55	60	4,906,284	4	29,272,754	2,114,772	6,676,305	16	11,582,589	19
Total			56,793,508	143	326,346,166	30,743,297	97,405,226	397	154,198,734	539

NAA/FWOP=No Action Alternative, Future Without Project; PA=Preferred Alternative

2.3 PROJECT SCHEDULE AND DREDGING FREQUENCIES

Construction is anticipated to begin in approximately 2023 but is contingent on funding availability. Construction (all channels and Anchorage F) of the Norfolk Harbor and Channels Deepening Project will take approximately 3.5 to 4 years to complete. Maintenance dredging is anticipated to occur on the approximate schedule below and is contingent on funding availability:

- Atlantic Ocean Channel: approximately every three to four years; after the deepening, this may accelerate to every two to three years.
- Thimble Shoals Channel: approximately every two to three years
- Norfolk Harbor Channel: approximately every 12-15 months
- Newport News Channel: approximately every three to four years
- Anchorage F: approximately every five years

Maintenance dredging may occur on an accelerated schedule based on shoaling conditions in the channel resulting from storm events or a delayed schedule depending on funding availability. Maintenance dredging will take approximately three to six months to complete and will be contingent on the type and size of the dredge used. Construction may occur at any time of the year, however, to the maximum practical extent possible, construction will not occur during September 1 - November 15 to reduce potential impacts to sea turtles. In general, construction operations will average approximately 18-hours per day any time of the day or night. The approximately six hours per day of construction operations may include equipment maintenance and personnel shifts.

2.4 ACTION AREA

Per 50 CFR 402.02, the Action Area is defined as “all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action.” The Action Area consists of the areas transited by dredging vessels/equipment, areas of navigation channel dredged as well as Anchorage F, and dredged material management/disposal sites. The Action Area includes the area of anticipated circulation patterns shifts and potential water quality impacts. The geographic extent of water quality impacts is dependent upon factors such as the type of dredging equipment, the dredging depth, and environmental conditions such as wind and currents (USACE 1983). The Action Area includes the range of noise impacts as they relate to individual listed species. A maximum buffer distance of five miles was used to account for any sound-related impacts associated with the project.

2.5 FEDERALLY LISTED SPECIES WITH THE POTENTIAL TO OCCUR IN THE ACTION AREA

Animals and plants listed as endangered or threatened are protected under the Endangered Species Act of 1973, as amended (ESA). According to the ESA, an “endangered species” is defined as any plant or animal species in danger of extinction throughout all or a substantial portion of its range. A “threatened species” is any species likely to become an endangered species in the foreseeable future throughout all or a substantial part of its range. “Proposed Species” are animal or plant species proposed in the Federal Register to be listed under Section 4 of the ESA. “Candidate species” are species for which the USFWS and NMFS have sufficient information on their biological status and threats to propose them as endangered or threatened under the ESA.

This section provides a summary of the federally listed species under the jurisdiction of the U.S. Fish and Wildlife Service (USFWS) that are known or have the potential to occur in the Action Area. The following references were consulted for compilation of the threatened and endangered species that have the potential to occur in the Action Area that is provided in Table 2:

- Information, Planning and Consultation System (IPaC) search conducted within the Action Area (U.S. Fish and Wildlife Service (USFWS) 2017);
- Virginia Fish and Wildlife Information Service (VaFWIS) database (VDGIF 2016b); and the
- Virginia Natural Heritage Database Search (Virginia Department of Conservation and Recreation (DCR) 2016);

Relevant consultation correspondence is provided in Appendix A. There are no candidate species known or with the potential to occur in the Action Area. There is no designated critical habitat under the jurisdiction of the USFWS in the Action Area.

Although it was listed in the IPaC we did not include the red cockaded woodpecker (*Picoides borealis*) in Table 2 as there is no habitat for this species in the Action Area and therefore, this species would not be anticipated to occur in the Action Area. Because there would be no effects to this species it is not discussed in detail in this Biological Assessment.

Although it was listed in the IPaC we did not include the hawksbill sea turtle (*Eretmochelys imbricata*) in Table 2 as there is no documented occurrence of the hawksbill sea turtle in the Action Area and there is no preferred habitat for this species in the Action Area. Because there would be no effects to this species it is not discussed in detail in this Biological Assessment.

Table 2. Federally listed species under the jurisdiction of the U.S. Fish and Wildlife Service known or with the potential to occur in the Action Area (USFWS 2017; VDGIF 2016b; DCR 2016).

Taxonomic Category/Common Name	Scientific Name	Status	Critical Habitat
Birds			
Piping plover	<i>Charadrius melodus</i>	T	Y*
Red knot	<i>Calidris canatus rufa</i>	T	N
Roseate tern	<i>Sterna dougallii</i>	E	N
Mammals			
Indiana bat	<i>Myotis sodalis</i>	E	Y*
Northern long-eared bat	<i>Myotis septentrionalis</i>	T	N
West Indian manatee	<i>Trichechus manatus</i>	T	Y*
Reptiles			
Green sea turtle (North Atlantic DPS)	<i>Chelonia mydas</i>	T	Y*
Kemp's ridley sea turtle	<i>Lepidochelys kempii</i>	E	N
Leatherback sea turtle	<i>Dermochelys coriacea</i>	E	Y*
Loggerhead sea turtle (Northwest Atlantic DPS)	<i>Caretta caretta</i>	T	Y*

DPS = Distinct Population Segment; T = Threatened; E = Endangered; Y = Yes; N = No; ^Species status is reported as it pertains to the DPS/Action Area; *Critical Habitat not located in Action Area

Birds

Piping Plover. The piping plover was listed as threatened in January 1986. The piping plover is a small shorebird that nests in the three separate geographic populations in the U.S.: the Great Plains states, the shores of the Great Lakes, and the shores of the Atlantic coast. Birds from all populations winter on the southern Atlantic and Gulf coasts in the U.S. The Atlantic coast population breeds on coastal beaches from Newfoundland to North Carolina (and occasionally South Carolina) and winters along the Atlantic coast from North Carolina south, along the Gulf Coast, and in the Caribbean. (USFWS 1996).

The piping plover is approximately seven inches in length, with a wingspan of about 15 inches. It has a pale brown back and crown, white underparts and rump, and a black upper tail with a white edge. It has an orange bill with black tip, a single breast black breastband, and a black bar across its forehead, and yellow to orange legs. The piping plover forages for invertebrates along the waterline of beaches, and nests in sandy/gravelly depressions away from the water, often within tern colonies. Nest sites are shallow scraped depressions in substrates ranging from fine grained sand to mixtures of sand and pebbles, shells or cobble, usually where there is little or no vegetation. (USFWS 1996). Breeding and wintering plovers forage on exposed wet sand in wash zones. They feed by probing for invertebrates that are found at or below the surface.

Piping plovers can be found in Virginia from spring through fall. In Virginia breeding and nesting is currently restricted to the Eastern Shore barrier islands (VDGIF 2016a). Plovers nest on ocean-facing beaches with little vegetation. Extensive beaches with wash-over habitat that have access to mudflats, sandflats, and tidal lagoons provide optimal nesting habitat for this species (VDGIF 2016a). According to VDGIF and USACE, they have been documented within

the Action Area, in the northern portion of, and within 0.75 mile of, the southern portion of CIDMMA. They winter in the Gulf of Mexico or the Caribbean (U.S Department of the Navy 2009). This species previously nested at CIDMMA, however, nesting has not occurred since 1997. Since 1998, migrating piping plovers have been observed foraging at CIDMMA in the early spring and again in the late summer during migration. (Robert Pruhs, pers comm). Therefore, this species may occur and forage within the Action Area but it does not currently nest in the Action Area.

Since its listing in 1986, the overall species population has increased 234%, from 790 pairs to an estimated 1,849 pairs; and the U.S. population has almost tripled from approximately 550 pairs to an estimated 1,596 pairs. However, its population growth pattern remains unstable. For example, in the Southern recovery unit, there had been a 68% decline between 1995 and 2001, prior to an overall increase between 1989 and 2008 of 66%, with almost three-quarters of this increase occurring in two years: 2003-2005. The main threats to the species are habitat loss and degradation, predation (particularly by dogs and cats), human disturbance, and more recently, wind turbines (Stantial and Cohen 2018) and climate change. Oil spills also are a potential threat to this species.

Critical habitat has been designated for this species in Illinois, Indiana, Michigan, Minnesota, New York, Ohio, and Pennsylvania, but there is no designated critical habitat in Virginia.

Red Knot. The red knot was listed as threatened in 2014. Red knots are characterized by their large, bulky sandpiper body form and a short, straight bill that tapers at the tip. Their head and breast are reddish in color during the breeding season but gray in color during the rest of the year. Red knots are known for their extensive migrations that can occur more than 9,300 miles from the Tierra del Fuego to the Canadian Arctic (USFWS 2016b). The decline of the red knot population in the 2000s is thought to be attributed to degrading foraging habitats. Delaware Bay is a key stopover for migrating red knots before they reach their breeding grounds in the Canadian Arctic. Horseshoe crab harvests in Delaware Bay are now under management to help recover the red knot population. There is no nesting habitat within the Action Area, however, foraging may occur in the Action Area. Red knots are thought to be vulnerable to the increasing threats of climate change that may impact the arctic tundra ecosystem in their breeding areas, coastal foraging habitats and other foraging habitats, and storm and weather changes (USFWS 2016b). Within the past few years, the population is thought to have stabilized but still remains at low population levels (USFWS 2016b).

Roseate Tern. The roseate tern was listed as endangered on 1987 in the northeastern U.S. populations in Florida, Georgia, North Carolina, Puerto Rico, South Carolina and the Virgin Islands are listed as threatened. The roseate tern is a medium sized, gull-like tern that is approximately 15 inches long (USFWS 2016c). The species is characterized by its black bill, black legs, white forehead, and deeply forked, long tail. The roseate tern forages nearly exclusively on small fish, namely the American sand lance in the northeast. Roseate terns nest on barrier islands often at the ends of the island or in breaks on the island. There is no reported nesting of roseate terns in the Action Area, however foraging is anticipated to occur in the Action Area.

Roseate tern populations in the northeastern U.S. were depleted from hunting in the 19th century for the hat trade. The population reached a high of 8,500 birds in in the 1930s but has declined since then and is thought to be in the range of 2,500 to 3,300 birds (USFWS 2016c).

Threats to the recovery of the roseate tern include human activity on barrier islands, predation, and competition with expanding gull populations (USFWS 2016c). Gulls are a larger and more aggressive species and outcompete roseate terns for nesting and foraging sites. The potential loss of barrier islands from erosion resulting from sea level rise is also an eminent threat for recovery of the roseate tern.

Mammals

Indiana Bat. The Indiana bat was listed as endangered in 1967 from human disturbance of caves during the winter which resulted in the substantial mortality of these bats (USFWS 2017a). The Indiana bat is a small species, weighing only one-quarter of an ounce with an approximate nine to 11 inch wingspan (USFWS 2017a). Their fur is dark brown to black in coloration. They eat a variety of insects along water bodies and uplands. They are vulnerable to disturbance because they hibernate in large numbers in only a few caves (USFWS 2017a). In the summer they roost in peeling bark of dead and dying. Additional threats to this species include the commercialization of caves, the loss of summer roosting habitat, pesticides and other contaminants, and the white-nosed syndrome (USFWS 2017a).

Northern Long-Eared Bat. The USFWS listed the northern long-eared bat threatened in 2015 with no designated critical habitat. The most severe threat attributed to the substantial population decline of the northern long-eared bat has been the widespread spread of the White-Nosed Syndrome that is caused by the fungal infection *Pd (Pseudogymnoascus destructans)*. The Action Area is located within the managed White-Nose Syndrome Buffer Zone as defined by the USFWS (2015b). Populations in Virginia are thought to have declined by 96% and are anticipated to decline with the continued spread of the White-Nose Syndrome (VDGIF 2014, unpublished data in USFWS 2015a). The northern long-eared bat is dark brown on its back with lighter coloration underneath with a wingspan of approximately nine to 10 inches and is approximately three to four inches in body length (USFWS 2015a). This bat is distinguished from other similar bat species in its genus by the length of its ears that extend past its nose when folded. During the winter, northern long-eared bats hibernate in caves and mines called hibernacula. During the summer, this species roosts beneath bark and in cavities of both live and dead trees (snags). They will also roost in human-made structures such as culverts, barns, and sheds. Females give birth to one young during the summer. There are no known surveys of this species in the Action Area so it is unknown if they forage in the Action Area. There are no trees in the Action Area and there are no reported roosting in the Action Area. No reported natural hibernacula are located in the Action Area. It is unknown if northern long-eared bats migrate through the Action Area.

West Indian Manatee. The west Indian manatee is listed as a federally listed species throughout its range. It can be typically found along the coast of Florida and in the Caribbean and adult manatees are about 10 feet long and weigh from 800 to 1,200 pounds. These docile animals feed on aquatic vegetation and move slowly through the water, often resting just below the water's surface with only its snout above water. They prefer large slow-moving rivers, river mouths, and shallow coastal areas. According to U.S. Fish and Wildlife Service, "The animals may travel great distances as they migrate between winter and summer grounds. During the winter, manatees congregate around warm springs and around power plants that discharge warm water. During summer months, they have occasionally been seen as far north as Virginia and Maryland." (USFWS 2008). There is no resident manatee population in the Action Area and the presence of a manatee in the Action Area would be considered a rare occurrence.

Sea Turtles:

Five sea turtle species are found in the U.S. Atlantic Ocean: green, hawksbill, Kemp's ridley, leatherback, and loggerhead sea turtles. Sea turtles often migrate long distances from nesting beaches to their foraging grounds. The waters of the Greater Atlantic Region serve as important foraging and developmental areas for sea turtles when water temperatures are warm enough. As water temperatures warm in the spring, sea turtles begin to migrate northward, typically arriving in Virginia waters as early as April/May and on the more northern foraging grounds in New England in June. This trend is reversed in the fall as water temperatures cool with most sea turtles leaving New England by fall (NOAA 2016a). Based on the sea turtle nesting database compiled of the long-term monitoring records from the Virginia Department of Game and Inland Fisheries and the Virginia Aquarium Stranding Response Program, no sea turtle nesting occurs in the Action Area. There would be "no affect" to any listed sea turtles under the jurisdiction of the USFWS within the Action Area and therefore, they are not discussed in the Effects Determination Section of this Biological Assessment.

Green Sea Turtle. The green sea turtle was listed as endangered in Florida, and threatened elsewhere in the U.S., in July 1978. However, on April 6, 2016, NMFS superseded this with a Federal Register announcement of 11 worldwide DPSs for this species, the North Atlantic DPS being inclusive of this region. The range of this DPS extends from the boundary of South and Central America, north along the coast to include Panama, Costa Rica, Nicaragua, Honduras, Belize, Mexico, and the U.S. East Coast. The range extends due east across the Atlantic Ocean to include a portion of the west coast of Africa. It was re-listed as a threatened species.

Green turtles are the largest of all the hard-shelled sea turtles, but have a comparatively small head. Its carapace is smooth with shades of black, gray, green, brown, and yellow. Adults can grow to four feet in length (carapace length) and weigh up to 440 pounds. Juveniles are omnivorous feeding on both benthic invertebrates as well as algae and sea grasses. Adults are largely herbivorous, feeding on algae and sea grasses. They occur seasonally in Mid-Atlantic waters such as the Chesapeake Bay and the Long Island Sound, which serve as foraging and developmental habitat. The principal feeding areas for the species are the west coast of Florida, the Florida Keys, and the Yucatan Peninsula (NMFS 2012). Juveniles and adults have the potential to forage in the Action Area.

According to NMFS, nesting has increased considerably since the 1970s. By far the most important nesting grounds for the Western Atlantic population remains in Costa Rica. In the U.S., nesting mostly occurs in Florida, although it has recently been recorded in North Carolina, at Bald Head Island and the Cape Hatteras National Seashore (NMFS 2012). In 2005, there was also a green sea turtle nest reported in Virginia Beach, Virginia which was the first time a green sea turtle nest has ever been documented in beaches near the Action Area. Nesting data indicate long-term increases at all major nesting sites (50 CFR 224). Its critical habitat in the U.S. is confined to Puerto Rico (NMFS 2012). Only one green sea turtle take has been recorded by USACE during dredging operations in the Atlantic Ocean and/or Chesapeake Bay channels, but no green sea turtle take has ever been reported in the Action Area.

Hawksbill Sea Turtle. The hawksbill sea turtle was listed endangered in 1970. It is small to medium-sized compared to other sea turtle species, and primarily consumes sponges, invertebrates, and algae. According to NMFS (2012), however, the species is uncommon in continental U.S. waters. It prefers coral reef habitats such as those in the Caribbean and Central America; its designated critical habitat in the U.S. is limited to Puerto Rico. In the continental U.S., nesting is confined to the southeast coast of Florida and the Florida Keys. The species has been documented as far north as Massachusetts; however, these sightings were considered to be strandings after hurricanes and offshore storms. Three hawksbill sea

turtles have been documented in Virginia waters since 1979; neither was in the Chesapeake Bay. Texas and Florida are the only states where sightings occur with any regularity; sightings north of Florida are considered rare. The NMFS determined in 2012 that the species was very unlikely to be found in the Action Area (NMFS 2012).

Kemp's Ridley Sea Turtle. The Kemp's ridley sea turtle was listed endangered in 1970. According to NMFS, Kemp's ridley is one of the least abundant of the world's sea turtles; it is mostly found in the Gulf of Mexico and the northwestern Atlantic Ocean. The majority of nesting occurs along a single stretch of beach near Rancho Nuevo, Tamaulipas, Mexico. In the U.S., nesting is limited to South Texas, where a record 195 nests were found in 2008. Nesting occurs from April through July each year, with hatchlings emerging after 45-48 days. Once they leave the nesting beach, hatchlings are distributed in both Gulf of Mexico and Atlantic Ocean (NMFS 2012).

Adult Kemp's ridleys are the smallest marine turtle in the world. Their carapaces are often grayish-green, and nearly circular. Each of the front flippers has one claw while the back flippers may have one or two. Adults can reach 24-28 inches in length, and can weigh up to 100 pounds. Developmental habitats are defined by several characteristics, including coastal areas sheltered from high winds and waves such as embayments and estuaries, and nearshore temperate waters shallower than 50 m. Kemp's ridleys eat a variety of crab species, with mollusks, shrimp, and fish consumed less frequently. (NMFS 2012).

The threats to the species are similar to those of the loggerhead. Interactions with fisheries may be particularly high for Kemp's ridleys. In addition, they may be more susceptible to oceanographic-related events such as cold-stunning. From 2006-2010, an average annual rate of 115 Kemp's ridleys were found cold-stunned on Cape Cod. Populations reached their lowest recorded point in 1985, when fewer than 300 nesting females were identified. Populations began to recover in the 1990s; and by 2006, there were an estimated 7,000-8,000 Kemp's ridley turtles (NMFS 2012). In 2014, there were a total of 10,986 nests recorded in Mexico, so there is cautious optimism; but not high enough numbers to declassify the species as of yet (NMFS and USFWS 2015). The NMFS documents that the Chesapeake Bay is among the foraging areas documented for this species. In the Bay, Kemp's ridley turtles frequently forage in submerged aquatic grass beds for crabs. However, in the Action Area for this project, there is no submerged aquatic vegetation.

Leatherback sea turtle. The leatherback sea turtle was listed as endangered in 1970. They are the largest living turtle species in the world, attaining lengths of up to 6.5 feet, and weighing up to 2,000 pounds. They are also the most migratory and wide-ranging of any sea turtle, ranging from the Atlantic, Pacific, and Indian Oceans, and the Mediterranean Sea. They migrate routinely between the northern temperate and tropical waters. Leatherbacks from the western North Atlantic beaches have been documented as using the entire North Atlantic Ocean. They are known as a pelagic (offshore) species that feeds on jellyfish and tunicates; however, they are also known to use the coastal waters of the continental shelf. They are often sited in temperature ranges similar to those preferred by the loggerhead (7°C to 27°C), however, they also appear to have greater tolerance of cooler water temperatures (NMFS 2012). In the Caribbean, Atlantic and Gulf of Mexico, leatherback populations are generally increasing. In the continental U.S., the Atlantic coast of Florida is one of the main nesting areas. No leatherback turtle takes have been reported from dredging of the Norfolk Harbor and Channels since monitoring began in 1994. Critical habitat in the U.S. is limited to the Virgin Islands.

Loggerhead Sea Turtle. The loggerhead sea turtle was listed as threatened in July 1978. The NMFS indicates that the loggerhead is the most abundant species of sea turtle in U.S. waters. The Northwest Atlantic DPS loggerhead is found in temperate and subtropical waters, from Florida to Cape Cod. Aerial surveys of continental shelf waters north of Cape Hatteras showed that loggerheads were most commonly sighted in waters with bottom depths ranging from 22 to 49 meters. However, in more recent survey data and satellite tracking data support that they occur in waters from beach to beyond continental shelf, in a range of habitats including offshore waters, continental shelves, bays, estuaries, and lagoons. They have been observed in waters with surface temperatures of 7°C to 30°C, but water temps of greater than 11°C are most favorable. They occur year-round in the ocean waters of North Carolina, South Carolina, Georgia, and Florida (NMFS 2012).

Loggerheads were named for their relatively large heads. They have powerful jaws that enable them to feed on hard-shelled prey, such as whelks and conch. Their carapaces are slightly heart-shaped and reddish-brown in adults and subadults, while the undersides are generally a pale yellowish color. The neck and flippers are usually dull brown to reddish brown on top and medium to pale yellow on the sides and bottom. Adults can reach lengths of three feet and weigh up to 250 pounds. (NOAA 2016g).

As coastal water temps warm in the spring, loggerheads begin to migrate to inshore waters of the Southeastern U.S., and also move up the U.S. Atlantic coast. They arrive in Virginia foraging areas as early as April and May. The majority of the nesting occurs on beaches of the southeastern U.S. Within its range, nesting season occurs late April to early September and hatching season late June through early November. Juveniles are omnivorous and forage on crabs, mollusks, jellyfish, and vegetation at or near the surface. Subadults and adults are primarily coastal dwelling and typically prey on benthic invertebrates such as mollusks and decapods crustaceans in hard bottom habitats. The loggerhead is a long-lived species with an average life span of 57 years (NMFS 2012).

Threats to species include by-catch in fisheries, interactions with vessels and dredges, oil spills, and other marine pollution in the water; and habitat loss, nesting predation or disturbance that affects eggs, hatchlings, and nesting females on land. Based on a five-year status review of the species, which discussed a variety of threats to loggerheads including climate change, NMFS and FWS determined that they should not be delisted or reclassified. A NMFS model in 2009 had suggested that the populations are most likely declining, although overall nesting population remains widespread, and the trend for nesting population appears to be stabilizing (NMFS 2012).

Critical habitat designated for this species includes the coastlines of Texas, Louisiana, Florida, and North Carolina, and areas well offshore of Mississippi, Alabama in the Gulf of Mexico, and well offshore of Georgia, South Carolina, and Virginia, in the Atlantic Ocean. Therefore, no critical habitat exists within the Action Area.

2.6 ALTERNATE MONITORING METHODS FOR UNEXPLODED ORDINANCE/MUNITIONS OF EXPLOSIVE CONCERN SCREENING

The UXO/MEC special screening are installed on dragheads to prevent or minimize the entrainment of UXO/MEC materials that may be present in the navigation channel or borrow area. Unexploded Ordinance/Munitions of Explosive Concern have been recovered during hopper dredging operations in Atlantic Ocean Channel, Thimble Shoals Channel, Cape Henry

Channel, and the Thimble Shoals Surround Borrow Area. The presence of UXO/MEC presents a safety hazard to both the vessel and human personnel onboard the vessel. The current specification for UXO/MEC screening on hopper dredge requires UXO/MEC special screening with screen openings no larger than 1.25 inch by 6-inch openings to prevent the passage of any material greater than 1.25 inch diameter.

2.7 EFFECTS DETERMINATION

2.7.1 BIRDS

Piping plovers, red knots, and roseate terns have the potential to forage, rest, and/or migrate through the Action Area but do not currently breed in the Action Area. Although piping plovers previously nested at the CIDMMA, the nesting habitat there has degraded and is not currently suitable for piping plover nesting. No future plans to resume the nesting management program to improve the nesting habitat are anticipated. The noise and temporary turbidity plume caused by dredging and dredged material placement actions and CIDMMA maintenance may cause these bird species to move away from the disturbance; however, we would expect this to be a negligible to minor, and temporary impact that would not substantially impact their long-term foraging or breeding success. The dredging and dredged material placement/disposal operations would have a temporary, negligible to minor adverse impact to benthic invertebrates and fish. This could potentially impact some of the prey species of the piping plovers, red knots, and roseate terns. The shifts in salinity, temperature, and sea level rise all have the potential to result in shifts in prey species availability which could also cause detrimental effects to these species. However, because of the already disturbed nature of the majority of the Action Area and the amount of other available habitat for prey species, we would not anticipate the Maximum Action Alternative to have any substantial impact on any prey invertebrate or fish populations.

Another potential threat to this species is injury or incidental take resulting from MEC/UXO detonation or contact with contaminants leaching from MEC/UXO that occur in the Action Area. However, we would not anticipate this to be a substantial threat as the USACE deploys MEC/UXO screening devices on dredges where there is risk of MEC/UXO detonation.

With implementation of the Preferred Alternative, the increased dredging and dredged material placement would cause more potential disturbances to listed birds in the Action Area. If listed avian species were in the Action Area we would anticipate a slight increase in disturbance effects that would range from negligible to minor impacts (birds temporarily moving away from the impact area) from implementation of the Preferred Alternative. We would not anticipate that this would substantively impact any potential foraging that could occur in the Action Area and surrounding areas.

Virginia Port growth is anticipated to increase throughout the next 50 years and a new port facility is planned, which may increase the number of vessels transiting the Norfolk Harbor and Channels. Also, additional development including construction of the Third Crossing, I-64 Widening and High Rise Bridge Replacement, and expansion of the Chesapeake Bay Bridge Tunnel is planned in the future. Additional development could increase avian disturbance impacts. However, implementation of the Preferred Alternative is not anticipated to substantially contribute to those increased impacts to listed avian species.

The loss of barriers and beach nesting breeding and foraging habitat anticipated with sea level rise has the potential to impact these species although the level of impact is relatively

uncertain. However, substantial cumulative or synergistic impacts resulting from implementation of the Preferred Alternative with the impacts of climate change is not anticipated. No substantive cumulative or synergistic impacts of implementation the Preferred Alternative with other past, present, or future projects are anticipated.

Therefore, the implementation of the Preferred Alternative may affect, but is not likely to adversely affect the piping plover, the red knot, or the roseate tern.

2.8 MAMMALS

2.8.1 NORTHERN LONG-EARED BAT AND INDIANA BAT

The Action Area is restricted to subtidal habitat and the CIDMMA. These areas would not provide suitable roosting or nesting habitat for the northern long-eared bat or the Indiana Bat. There is no known hibernacula in the Action Area. It is unknown if the bat species migrate through the Action Area, however, this seems unlikely as this would not be their preferred nesting or foraging habitat. Even if flights did occur in the Action Area, it is not anticipated that implementation of the Preferred Alternative would impact any flight patterns.

Therefore, implementation of the Preferred Alternative is anticipated to have no effect on the northern long-eared bat or the Indiana Bat.

2.8.2 WEST INDIAN MANATEE

Because the west Indian manatee is so unlikely to occur in the Action Area, it is unlikely there would be any interactions or impacts to this species. There is no data indicating that dredging, or dredged material placement, or turtle trawling relocation efforts has ever impacted any manatees. The presence of a west Indian manatee in the Action Area would be considered a rare and temporary occurrence. Because there is no Submerged Aquatic Vegetation in the Action Area, there is no foraging habitat for manatees. Because the west Indian manatee is not anticipated to occur in the Action Area, any effects would be discountable.

Therefore, the implementation of the Preferred Alternative may affect, but is not likely to adversely affect the West Indian Manatee.

3.0 SPECIES SUMMARY CONCLUSION TABLE.

Table 3 provides the summary species conclusion table.

Table 3. Norfolk Harbor Navigation Improvements Summary Species Conclusion Table (within the jurisdiction of the U.S. Fish and Wildlife Service).

Species / Resource Name	ESA Section 7 / Eagle Act Determination	Notes / Documentation
Piping plover, red knot, and roseate turn	May Affect, Not Likely to Adversely Affect	The project may slightly impact flight and foraging behaviors but would have a negligible to minor impact.
Red-cockaded woodpecker	No Effect	There is no habitat for this species in the Action Area and therefore, this species would not be anticipated to occur in the Action Area.
West Indian manatee	May Affect, Not Likely to Adversely Affect	Manatees would be transient species and would not likely occur in the Action Area. Effects would be discountable.
Northern long-eared bat and Indiana bat	No Effect	No suitable foraging or roosting habitat is located in the Action Area. There is no known hibernacula in the Action Area. The project would not be anticipated to affect flights if they occur in this area.
Sea turtles: green, Kemp's ridley, leatherback, and loggerhead	No Effect (within the jurisdiction of the U.S. Fish and Wildlife Service)	There is no nesting habitat in the Action Area.
Hawksbill sea turtle	No Effect (within the jurisdiction of the U.S. Fish and Wildlife Service)	There is no nesting habitat in the Action Area. There is no documented occurrence of the hawksbill sea turtle in the Action Area and there is no preferred habitat for this species in the Action Area. This species would not be anticipated to occur in the Action Area.
Bald eagle	Unlikely to disturb nesting bald eagles. Does not intersect with eagle concentration area	No documented recent nesting in the project area (The Center for Conservation Biology 2017; Appendix B). Foraging may be temporarily disturbed during project construction.
Candidate species	No effect; No species present.	

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Appendix A – Coordination and Consultation Correspondence



United States Department of the Interior

FISH AND WILDLIFE SERVICE



Virginia Field Office
6669 Short Lane
Gloucester, VA 23061

Date: March 5, 2018

Self-Certification Letter

Project Name: Norfolk Harbor Navigation Improvements

Dear Applicant:

Thank you for using the U.S. Fish and Wildlife Service (Service) Virginia Ecological Services online project review process. By printing this letter in conjunction with your project review package, you are certifying that you have completed the online project review process for the project named above in accordance with all instructions provided, using the best available information to reach your conclusions. This letter, and the enclosed project review package, completes the review of your project in accordance with the Endangered Species Act of 1973 (16 U.S.C. . 1531-1544, 87 Stat. 884), as amended (ESA), and the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c, 54 Stat. 250), as amended (Eagle Act). This letter also provides information for your project review under the National Environmental Policy Act of 1969 (P.L. 91-190, 42 U.S.C. 4321-4347, 83 Stat. 852), as amended. A copy of this letter and the project review package must be submitted to this office for this certification to be valid. This letter and the project review package will be maintained in our records.

The species conclusions table in the enclosed project review package summarizes your ESA and Eagle Act conclusions. These conclusions resulted in:

- “no effect” determinations for proposed/listed species and/or proposed/designated critical habitat; and/or
- “may affect, not likely to adversely affect” determinations for proposed/listed species and/or proposed/designated critical habitat; and/or
- “may affect, likely to adversely affect” determination for the Northern long-eared bat (*Myotis septentrionalis*) and relying on the findings of the January 5, 2016 Programmatic Biological Opinion for the Final 4(d) Rule on the Northern long-eared bat; and/or
- “no Eagle Act permit required” determinations for eagles.

We certify that use of the online project review process in strict accordance with the instructions provided as documented in the enclosed project review package results in reaching the appropriate determinations. Therefore, we concur with the “no effect” or “not likely to adversely affect” determinations for proposed and listed species and proposed and designated critical habitat; the “may affect” determination for Northern long-eared bat; and/or the “no Eagle Act permit required” determinations for eagles. Additional coordination with this office is not needed.

Candidate species are not legally protected pursuant to the ESA. However, the Service encourages consideration of these species by avoiding adverse impacts to them. Please contact this office for additional coordination if your project action area contains candidate species.

Should project plans change or if additional information on the distribution of proposed or listed species, proposed or designated critical habitat, or bald eagles becomes available, this determination may be reconsidered. This certification letter is valid for 1 year.

Information about the online project review process including instructions and use, species information, and other information regarding project reviews within Virginia is available at our website http://www.fws.gov/northeast/virginiafield/endspecies/project_reviews.html. If you have any questions, please contact Troy Andersen of this office at (804) 824-2428.

Sincerely,



Cindy Schulz
Field Supervisor
Virginia Ecological Services

Enclosures - project review package



United States Department of the Interior



FISH AND WILDLIFE SERVICE
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In Reply Refer To:

March 05, 2018

Consultation Code: 05E2VA00-2018-SLI-1002

Event Code: 05E2VA00-2018-E-04923

Project Name: Norfolk Harbor and Channels Navigation Improvements

Subject: Updated list of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). Any activity proposed on National Wildlife Refuge lands must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered

species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Virginia Ecological Services Field Office

6669 Short Lane

Gloucester, VA 23061-4410

(804) 693-6694

This project's location is within the jurisdiction of multiple offices. Expect additional species list documents from the following office, and expect that the species and critical habitats in each document reflect only those that fall in the office's jurisdiction:

Raleigh Ecological Services Field Office

Post Office Box 33726

Raleigh, NC 27636-3726

(919) 856-4520

Project Summary

Consultation Code: 05E2VA00-2018-SLI-1002

Event Code: 05E2VA00-2018-E-04923

Project Name: Norfolk Harbor and Channels Navigation Improvements

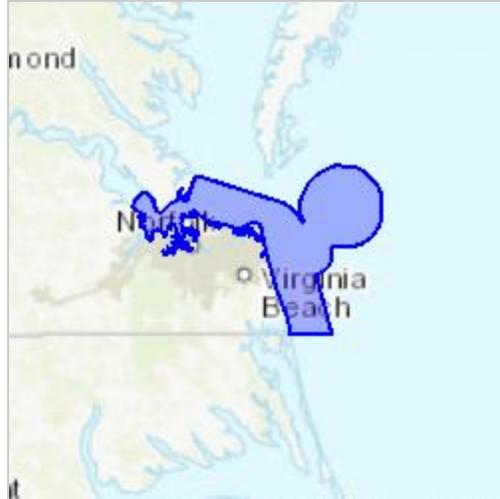
Project Type: DREDGE / EXCAVATION

Project Description: The Norfolk Harbor and Channels project is a single purpose deep draft navigation project located in Hampton Roads, a 25 square mile natural harbor serving the port facilities in the cities of Norfolk, Newport News, Portsmouth, Chesapeake, and Hampton. The project consists of a network of federally improved channels extending from the Atlantic Ocean, through the Chesapeake Bay, and into the Port of Hampton Roads. Since the Water Resources Development Act (WRDA) of 1986, the project has been constructed in separable elements based on the needs of the port community and the financial capability of the non-federal sponsor, the Virginia Port Authority, agent of the Commonwealth of Virginia. The Preferred Alternative consists of constructing and maintaining the following features:

- Deepening the Atlantic Ocean Channel to a required depth of approximately 59 feet;
- Deepening the Thimble Shoal Channel to a required depth of approximately 56 feet;
- Deepening the Norfolk Harbor Channel to a required depth of approximately 55 feet;
- Deepening the Norfolk Harbor Entrance Channel to a required depth of approximately 55 feet;
- Deepening the Newport News Channel to a required depth of approximately 55 feet;
- Widening the Thimble Shoal Channel east of the Chesapeake Bay Bridge Tunnel to approximately 1,300 feet;
- Widening Anchorage F to approximately 3,620 feet and associated modifications of the Approach Area; and
- Deepening Anchorage F to a required depth of approximately 51 feet.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/36.83596423577028N75.83101365322412W>



Counties: Currituck, NC | Chesapeake, VA | Hampton, VA | Isle of Wight, VA | Newport News, VA | Norfolk, VA | Northampton, VA | Portsmouth, VA | Suffolk, VA | Virginia Beach, VA

Endangered Species Act Species

There is a total of 9 threatened, endangered, or candidate species on this species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Birds

NAME	STATUS
Piping Plover <i>Charadrius melodus</i> Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Red Knot <i>Calidris canutus rufa</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened
Red-cockaded Woodpecker <i>Picoides borealis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7614	Endangered
Roseate Tern <i>Sterna dougallii dougallii</i> Population: northeast U.S. nesting pop. No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2083	Endangered

Reptiles

NAME	STATUS
Hawksbill Sea Turtle <i>Eretmochelys imbricata</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3656	Endangered
Kemp's Ridley Sea Turtle <i>Lepidochelys kempii</i> There is proposed critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5523	Endangered
Leatherback Sea Turtle <i>Dermochelys coriacea</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1493	Endangered
Loggerhead Sea Turtle <i>Caretta caretta</i> Population: Northwest Atlantic Ocean DPS There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1110	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

REFUGE INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED.
PLEASE CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Virginia Ecological Services Field Office
6669 Short Lane
Gloucester, VA 23061-4410
Phone: (804) 693-6694 Fax: (804) 693-9032
<http://www.fws.gov/northeast/virginiafield/>

In Reply Refer To:

December 18, 2017

Consultation Code: 05E2VA00-2018-SLI-1002

Event Code: 05E2VA00-2018-E-02355

Project Name: Norfolk Harbor and Channels Navigation Improvements

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.). Any activity proposed on National Wildlife Refuge lands must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to

utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Virginia Ecological Services Field Office

6669 Short Lane

Gloucester, VA 23061-4410

(804) 693-6694

This project's location is within the jurisdiction of multiple offices. Expect additional species list documents from the following office, and expect that the species and critical habitats in each document reflect only those that fall in the office's jurisdiction:

Raleigh Ecological Services Field Office

Post Office Box 33726

Raleigh, NC 27636-3726

(919) 856-4520

Project Summary

Consultation Code: 05E2VA00-2018-SLI-1002

Event Code: 05E2VA00-2018-E-02355

Project Name: Norfolk Harbor and Channels Navigation Improvements

Project Type: DREDGE / EXCAVATION

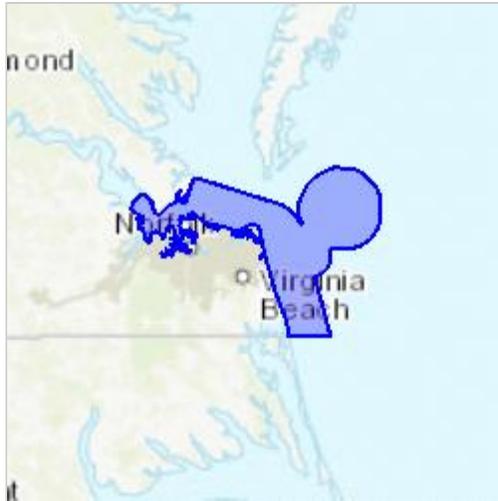
Project Description: The Norfolk Harbor and Channels project is a single purpose deep draft navigation project located in Hampton Roads, a 25 square mile natural harbor serving the port facilities in the cities of Norfolk, Newport News, Portsmouth, Chesapeake, and Hampton. The project consists of a network of federally improved channels extending from the Atlantic Ocean, through the Chesapeake Bay, and into the Port of Hampton Roads. The Preferred Alternative consists of constructing and maintaining the following features:

- Deepening the Atlantic Ocean Channel to a required depth of approximately 59 feet;
- Deepening the Thimble Shoal Channel to a required depth of approximately 56 feet;
- Widening the Thimble Shoal Channel Meeting Areas (one on each side of the Chesapeake Bay Bridge Tunnel) to approximately 1,200 feet (an additional 200 feet from current conditions);
- Deepening Anchorage F to a required depth of approximately 55 feet;
- Deepening the Norfolk Harbor Channel to a required depth of approximately 55 feet;
- Deepening the Newport News Channel to a required depth of approximately 55 feet.

Project Location:

Approximate location of the project can be viewed in Google Maps:

<https://www.google.com/maps/place/36.83596423577028N75.83101365322412W>



Counties:

Currituck, NC | Chesapeake, VA | Hampton, VA | Isle of Wight, VA |
Newport News, VA | Norfolk, VA | Northampton, VA | Portsmouth, VA |
Suffolk, VA | Virginia Beach, VA

Endangered Species Act Species

There is a total of 9 threatened, endangered, or candidate species on this species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Birds

NAME	STATUS
Piping Plover <i>Charadrius melodus</i> Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered. There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6039	Threatened
Red Knot <i>Calidris canutus rufa</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened
Red-cockaded Woodpecker <i>Picoides borealis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7614	Endangered
Roseate Tern <i>Sterna dougallii dougallii</i> Population: northeast U.S. nesting pop. No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2083	Endangered

Reptiles

NAME	STATUS
<p>Hawksbill Sea Turtle <i>Eretmochelys imbricata</i></p> <p>There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3656</p>	Endangered
<p>Kemp's Ridley Sea Turtle <i>Lepidochelys kempii</i></p> <p>There is proposed critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5523</p>	Endangered
<p>Leatherback Sea Turtle <i>Dermochelys coriacea</i></p> <p>There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1493</p>	Endangered
<p>Loggerhead Sea Turtle <i>Caretta caretta</i></p> <p>Population: Northwest Atlantic Ocean DPS There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1110</p>	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

The following FWS National Wildlife Refuge Lands and Fish Hatcheries lie fully or partially within your project area:

FACILITY NAME	ACRES
Back Bay National Wildlife Refuge Back Bay National Wildlife Refuge 1324 Sandbridge Road Virginia Beach, VA 23456-4023 (757) 301-7329 https://www.fws.gov/refuges/profiles/index.cfm?id=51510	8,650

My project

IPaC Trust Resource Report

Generated July 20, 2015 02:33 PM MDT



US Fish & Wildlife Service

IPaC Trust Resource Report



Project Description

NAME

My project

PROJECT CODE

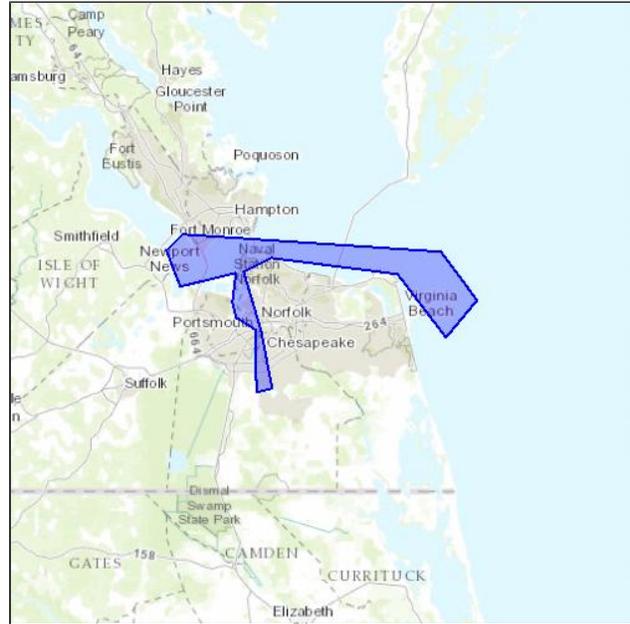
CMYDJ-LJNGZ-FRXP7-CUH4K-BKTG34

LOCATION

Virginia

DESCRIPTION

No description provided



U.S. Fish & Wildlife Contact Information

Species in this report are managed by:

Virginia Ecological Services Field Office

6669 Short Lane

Gloucester, VA 23061-4410

(804) 693-6694

Endangered Species

Proposed, candidate, threatened, and endangered species that are managed by the [Endangered Species Program](#) and should be considered as part of an effect analysis for this project.

This unofficial species list is for informational purposes only and does not fulfill the requirements under [Section 7](#) of the Endangered Species Act, which states that Federal agencies are required to "request of the Secretary of Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action." This requirement applies to projects which are conducted, permitted or licensed by any Federal agency.

A letter from the local office and a species list which fulfills this requirement can be obtained by returning to this project on the IPaC website and requesting an Official Species List from the regulatory documents section.

Birds

Piping Plover *Charadrius melodus*

Threatened

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B079>

Red Knot *Calidris canutus rufa*

Threatened

CRITICAL HABITAT

No critical habitat has been designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0DM>

Roseate Tern *Sterna dougallii dougallii*

Endangered

CRITICAL HABITAT

No critical habitat has been designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B07O>

Mammals

Northern Long-eared Bat *Myotis septentrionalis*

Threatened

CRITICAL HABITAT

No critical habitat has been designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=A0JE>

Reptiles

Green Sea Turtle *Chelonia mydas*

Threatened**CRITICAL HABITAT**

There is **final** critical habitat designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=C00S>

Hawksbill Sea Turtle *Eretmochelys imbricata*

Endangered**CRITICAL HABITAT**

There is **final** critical habitat designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=C00E>

Kemp's Ridley Sea Turtle *Lepidochelys kempii*

Endangered**CRITICAL HABITAT**

No critical habitat has been designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=C00O>

Leatherback Sea Turtle *Dermochelys coriacea*

Endangered**CRITICAL HABITAT**

There is **final** critical habitat designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=C00F>

Loggerhead Sea Turtle *Caretta caretta*

Threatened**CRITICAL HABITAT**

There are both **final** and **proposed** critical habitat designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=C00U>

Critical Habitats

Potential effects to critical habitat(s) within the project area must be analyzed along with the endangered species themselves.

There is no critical habitat within this project area

Migratory Birds

Birds are protected by the [Migratory Bird Treaty Act](#) and the Bald and Golden Eagle Protection Act.

Any activity which results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service (1). There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

You are responsible for complying with the appropriate regulations for the protection of birds as part of this project. This involves analyzing potential impacts and implementing appropriate conservation measures for all project activities.

American Kestrel <i>Falco sparverius paulus</i> Year-round	Bird of conservation concern
American Oystercatcher <i>Haematopus palliatus</i> Year-round https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0G8	Bird of conservation concern
American Bittern <i>Botaurus lentiginosus</i> Season: Wintering https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0F3	Bird of conservation concern
Bald Eagle <i>Haliaeetus leucocephalus</i> Year-round https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B008	Bird of conservation concern
Black Skimmer <i>Rynchops niger</i> Season: Breeding https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0EO	Bird of conservation concern
Black Rail <i>Laterallus jamaicensis</i> Season: Breeding https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B09A	Bird of conservation concern
Black-throated Green Warbler <i>Dendroica virens</i> Season: Breeding	Bird of conservation concern
Brown-headed Nuthatch <i>Sitta pusilla</i> Year-round	Bird of conservation concern
Fox Sparrow <i>Passerella iliaca</i> Season: Wintering	Bird of conservation concern
Great Shearwater <i>Puffinus gravis</i> Season: Migrating	Bird of conservation concern
Gull-billed Tern <i>Gelochelidon nilotica</i> Season: Breeding	Bird of conservation concern
Horned Grebe <i>Podiceps auritus</i> Season: Wintering	Bird of conservation concern
Hudsonian Godwit <i>Limosa haemastica</i> Season: Migrating	Bird of conservation concern
Least Bittern <i>Ixobrychus exilis</i> Season: Breeding	Bird of conservation concern

Least Tern <i>Sterna antillarum</i> Season: Breeding	Bird of conservation concern
Lesser Yellowlegs <i>Tringa flavipes</i> Season: Wintering	Bird of conservation concern
Marbled Godwit <i>Limosa fedoa</i> Season: Wintering	Bird of conservation concern
Nelson's Sparrow <i>Ammodramus nelsoni</i> Season: Wintering	Bird of conservation concern
Peregrine Falcon <i>Falco peregrinus</i> Season: Wintering https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0FU	Bird of conservation concern
Pied-billed Grebe <i>Podilymbus podiceps</i> Year-round	Bird of conservation concern
Prairie Warbler <i>Dendroica discolor</i> Season: Breeding	Bird of conservation concern
Prothonotary Warbler <i>Protonotaria citrea</i> Season: Breeding	Bird of conservation concern
Purple Sandpiper <i>Calidris maritima</i> Season: Wintering	Bird of conservation concern
Red Knot <i>Calidris canutus rufa</i> Season: Wintering https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0DM	Bird of conservation concern
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i> Year-round	Bird of conservation concern
Rusty Blackbird <i>Euphagus carolinus</i> Season: Wintering	Bird of conservation concern
Saltmarsh Sparrow <i>Ammodramus caudacutus</i> Year-round	Bird of conservation concern
Seaside Sparrow <i>Ammodramus maritimus</i> Year-round	Bird of conservation concern
Sedge Wren <i>Cistothorus platensis</i> Season: Wintering	Bird of conservation concern
Short-billed Dowitcher <i>Limnodromus griseus</i> Season: Wintering	Bird of conservation concern
Short-eared Owl <i>Asio flammeus</i> Season: Wintering https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HD	Bird of conservation concern
Snowy Egret <i>Egretta thula</i> Season: Breeding	Bird of conservation concern
Swainson's Warbler <i>Limnithlypis swainsonii</i> Season: Breeding	Bird of conservation concern
Wood Thrush <i>Hylocichla mustelina</i> Season: Breeding	Bird of conservation concern
Worm Eating Warbler <i>Helmitheros vermivorum</i> Season: Breeding	Bird of conservation concern
Yellow Rail <i>Coturnicops noveboracensis</i> Season: Wintering	Bird of conservation concern

Refuges

Any activity proposed on [National Wildlife Refuge](#) lands must undergo a 'Compatibility Determination' conducted by the Refuge. If your project overlaps or otherwise impacts a Refuge, please contact that Refuge to discuss the authorization process.

There are no refuges within this project area

Wetlands

Impacts to [NWI wetlands](#) and other aquatic habitats from your project may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes.

Project proponents should discuss the relationship of these requirements to their project with the Regulatory Program of the appropriate [U.S. Army Corps of Engineers District](#).

DATA LIMITATIONS

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

DATA EXCLUSIONS

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

DATA PRECAUTIONS

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Wetland data is unavailable at this time.

Natural Heritage Resources

Your Criteria

Federal Legal Status: LE - Listed endangered,LT - Listed threatened

State Legal Status: LE - Listed endangered,LT - Listed threatened

Watershed (8 digit HUC): 02080101 - Lower Chesapeake Bay

Search Run: 11/6/2017 13:01:11 PM

Result Summary

Total Species returned: 1

Total Communities returned: 0

Click scientific names below to go to NatureServe report.

Click column headings for an explanation of species and community ranks.

Common Name/Natural Community	Scientific Name	Global Conservation Status Rank	State Conservation Status Rank	Federal Legal Status	State Legal Status	Statewide Occurrences	Virginia Coastal Zone
Lower Chesapeake Bay							
FISH							
Atlantic Sturgeon	Acipenser oxyrinchus	G3	S2	LE	LE	2	Y

Note: On-line queries provide basic information from DCR's databases at the time of the request. They are NOT to be substituted for a project review or for on-site surveys required for environmental assessments of specific project areas.

For Additional Information on locations of Natural Heritage Resources please submit an [information request](#).

To Contribute information on locations of natural heritage resources, please fill out and submit a [rare species sighting form](#).

Natural Heritage Resources

Your Criteria

Federal Legal Status: LE - Listed endangered,LT - Listed threatened

State Legal Status: LE - Listed endangered,LT - Listed threatened

Watershed (8 digit HUC): 02080208 - Hampton Roads

Subwatershed (12 digit HUC): Select All

Search Run: 11/6/2017 12:58:14 PM

Result Summary

Total Species returned: 33

Total Communities returned: 0

Click scientific names below to go to NatureServe report.

Click column headings for an explanation of species and community ranks.

Common Name/Natural Community	Scientific Name	Global Conservation Status Rank	State Conservation Status Rank	Federal Legal Status	State Legal Status	Statewide Occurrences	Virginia Coastal Zone
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Hampton Roads

(Lower) Chesapeake Bay (Deep)

FISH

Common Name/Natural Community	Scientific Name	Global Conservation Status Rank	State Conservation Status Rank	Federal Legal Status	State Legal Status	Statewide Occurrences	Virginia Coastal Zone
Atlantic Sturgeon (Lower) Chesapeake Bay-Back River-Harris River FISH	Acipenser oxyrinchus	G3	S2	LE	LE	2	Y
Atlantic Sturgeon College Creek FISH	Acipenser oxyrinchus	G3	S2	LE	LE	2	Y
Atlantic Sturgeon Cypress Swamp-Dragon Swamp AMPHIBIANS	Acipenser oxyrinchus	G3	S2	LE	LE	2	Y
Mabee's Salamander REPTILES	Ambystoma mabeei	G4	S1S2	None	LT	17	Y
Canebrake Rattlesnake	Crotalus horridus [Coastal Plain population]	G4T4	S1	None	LE	20	Y
Dismal Swamp Canal-Cross Canal-Corapeake Ditch (NC) REPTILES	Crotalus horridus [Coastal Plain population]	G4T4	S1	None	LE	20	Y
Dismal Swamp-Dismal Swamp Canal-Big Entry Ditch REPTILES	Crotalus horridus [Coastal Plain population]	G4T4	S1	None	LE	20	Y
Dismal Swamp-Dismal Swamp Canal-Fivemile Ditch							

Common Name/Natural Community	Scientific Name	Global Conservation Status Rank	State Conservation Status Rank	Federal Legal Status	State Legal Status	Statewide Occurrences	Virginia Coastal Zone
REPTILES							
Canebrake Rattlesnake	Crotalus horridus [Coastal Plain population]	G4T4	S1	None	LE	20	Y
Dismal Swamp-Jericho Ditch-Washington Ditch							
REPTILES							
Canebrake Rattlesnake	Crotalus horridus [Coastal Plain population]	G4T4	S1	None	LE	20	Y
Dismal Swamp-Lake Drummond-Lake Drummond Feeder Ditch-Moss Swamp							
REPTILES							
Canebrake Rattlesnake	Crotalus horridus [Coastal Plain population]	G4T4	S1	None	LE	20	Y
Eastern Branch Elizabeth River							
BIRDS							
Peregrine Falcon	Falco peregrinus	G4	S1B,S2N	None	LT	36	Y
Elizabeth River-Lafayette River							
BIRDS							
Wilson's Plover	Charadrius wilsonia	G5	S1B	None	LE	11	Y
Grays Creek							
FISH							
Atlantic Sturgeon	Acipenser oxyrinchus	G3	S2	LE	LE	2	Y
Hampton Roads Channel							
BIRDS							
Gull-billed	Gelochelidon	G5	S2B	None	LT	19	Y

Common Name/Natural Community	Scientific Name	Global Conservation Status Rank	State Conservation Status Rank	Federal Legal Status	State Legal Status	Statewide Occurrences	Virginia Coastal Zone
Tern	nilotica						
FISH							
Atlantic Sturgeon	Acipenser oxyrinchus	G3	S2	LE	LE	2	Y
Hampton Roads-Hampton River							
FISH							
Atlantic Sturgeon	Acipenser oxyrinchus	G3	S2	LE	LE	2	Y
Hampton Roads-Streeter Creek							
BIRDS							
Piping Plover	Charadrius melodus	G3	S2B,S1N	LT	LT	16	Y
Wilson's Plover	Charadrius wilsonia	G5	S1B	None	LE	11	Y
FISH							
Atlantic Sturgeon	Acipenser oxyrinchus	G3	S2	LE	LE	2	Y
James River-Broad Swamp							
FISH							
Atlantic Sturgeon	Acipenser oxyrinchus	G3	S2	LE	LE	2	Y
James River-Cooper Creek							
FISH							
Atlantic Sturgeon	Acipenser oxyrinchus	G3	S2	LE	LE	2	Y
James River-Lower Chippokes Creek							
FISH							
Atlantic Sturgeon	Acipenser oxyrinchus	G3	S2	LE	LE	2	Y
James River-Morrisons Creek							
FISH							
Atlantic Sturgeon	Acipenser oxyrinchus	G3	S2	LE	LE	2	Y

Common Name/Natural Community	Scientific Name	Global Conservation Status Rank	State Conservation Status Rank	Federal Legal Status	State Legal Status	Statewide Occurrences	Virginia Coastal Zone
Sturgeon James River-Skiffes Creek FISH	oxyrinchus	G3	S2	LE	LE	2	Y
Atlantic Sturgeon Jones Swamp-Spivey Swamp BIRDS	Acipenser oxyrinchus	G3	S1	LE	LE	7	Y
Red-cockaded Woodpecker Lake Kilby-Speights Run BIRDS	Picoides borealis	G3	S1	LE	LE	7	Y
Red-cockaded Woodpecker Nansemond River-Bennett Creek REPTILES	Crotalus horridus [Coastal Plain population]	G4T4	S1	None	LE	20	Y
Nansemond River-Cedar Lake AMPHIBIANS	Ambystoma mabeei	G4	S1S2	None	LT	17	Y
Mabee's Salamander REPTILES	Crotalus horridus [Coastal Plain population]	G4T4	S1	None	LE	20	Y
Canebrake Rattlesnake Southern Branch Elizabeth River-Deep Creek REPTILES							

Common Name/Natural Community	Scientific Name	Global Conservation Status Rank	State Conservation Status Rank	Federal Legal Status	State Legal Status	Statewide Occurrences	Virginia Coastal Zone
Canebrake Rattlesnake	Crotalus horridus [Coastal Plain population]	G4T4	S1	None	LE	20	Y
Western Branch Elizabeth River							
BIRDS							
Peregrine Falcon	Falco peregrinus	G4	S1B,S2N	None	LT	36	Y
REPTILES							
Canebrake Rattlesnake	Crotalus horridus [Coastal Plain population]	G4T4	S1	None	LE	20	Y
Willoughby Bay-Masons Creek							
FISH							
Atlantic Sturgeon	Acipenser oxyrinchus	G3	S2	LE	LE	2	Y

Note: On-line queries provide basic information from DCR's databases at the time of the request. They are NOT to be substituted for a project review or for on-site surveys required for environmental assessments of specific project areas.

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To Contribute information on locations of natural heritage resources, please fill out and submit a [rare species sighting form](#).

VaFWIS Search Report Compiled on 11/6/2017, 12:31:45 PM

Known or likely to occur within a **10 mile radius around point Craney Island Island Portsmouth city (at 36,53,32.5 -76,21,33.8)**

in **093 Isle of Wight County, 550 Chesapeake City, 650 Hampton City, 700 Newport News City, 710 Norfolk City, 740 Portsmouth City, 800 Suffolk City, 810 Virginia Beach City, VA**

[View Map of Site Location](#)

785 Known or Likely Species ordered by Status Concern for Conservation (displaying first 54) (54 species with Status* or Tier I** or Tier II**)

<u>BOVA Code</u>	<u>Status*</u>	<u>Tier**</u>	<u>Common Name</u>	<u>Scientific Name</u>
010031	FESE	Ia	<u>Sturgeon, shortnose</u>	Acipenser brevirostrum
030074	FESE	Ia	<u>Turtle, Kemp's ridley sea</u>	Lepidochelys kempii
040228	FESE	Ia	<u>Woodpecker, red-cockaded</u>	Picoides borealis
010032	FESE	Ib	<u>Sturgeon, Atlantic</u>	Acipenser oxyrinchus
030075	FESE	Ic	<u>Turtle, leatherback sea</u>	Dermochelys coriacea
030073	FESE		<u>Turtle, hawksbill sea</u>	Eretmochelys imbricata
040183	FESE		<u>Tern, roseate</u>	Sterna dougallii dougallii
030071	FTST	Ia	<u>Turtle, loggerhead sea</u>	Caretta caretta
040144	FTST	Ia	<u>Knot, red</u>	Calidris canutus rufa
050022	FTST	Ia	<u>Bat, northern long-eared</u>	Myotis septentrionalis
030072	FTST	Ib	<u>Turtle, green sea</u>	Chelonia mydas
040120	FTST	IIa	<u>Plover, piping</u>	Charadrius melodus
100361	FTST	IIa	<u>Beetle, northeastern beach tiger</u>	Cicindela dorsalis dorsalis
120030	FTSE	IVb	<u>Manatee, West Indian</u>	Trichechus manatus
030064	SE	Ia	<u>Turtle, eastern chicken</u>	Deirochelys reticularia reticularia

040118	SE	Ia	<u>Plover, Wilson's</u>	Charadrius wilsonia
040110	SE	Ia	<u>Rail, black</u>	Laterallus jamaicensis
050020	SE	Ia	<u>Bat, little brown</u>	Myotis lucifugus lucifugus
050034	SE	Ia	<u>Bat, Rafinesque's eastern big-eared</u>	Corynorhinus rafinesquii macrotis
050027	SE	Ia	<u>Bat, tri-colored</u>	Perimyotis subflavus
020052	SE	IIa	<u>Salamander, eastern tiger</u>	Ambystoma tigrinum
030013	SE	IIa	<u>Rattlesnake, canebrake</u>	Crotalus horridus
040096	ST	Ia	<u>Falcon, peregrine</u>	Falco peregrinus
040293	ST	Ia	<u>Shrike, loggerhead</u>	Lanius ludovicianus
040379	ST	Ia	<u>Sparrow, Henslow's</u>	Ammodramus henslowii
040179	ST	Ia	<u>Tern, gull-billed</u>	Sterna nilotica
020044	ST	IIa	<u>Salamander, Mabee's</u>	Ambystoma mabeei
020002	ST	IIa	<u>Treefrog, barking</u>	Hyla gratiosa
030010	ST	IIa	<u>Lizard, eastern glass</u>	Ophisaurus ventralis
040403	ST		<u>Falcon, Arctic peregrine</u>	Falco peregrinus tundrius
040292	ST		<u>Shrike, migrant loggerhead</u>	Lanius ludovicianus migrans
030067	CC	IIa	<u>Terrapin, northern diamond-backed</u>	Malaclemys terrapin terrapin
030063	CC	IIIa	<u>Turtle, spotted</u>	Clemmys guttata
040092		Ia	<u>Eagle, golden</u>	Aquila chrysaetos
040040		Ia	<u>Ibis, glossy</u>	Plegadis falcinellus
040306		Ia	<u>Warbler, golden-winged</u>	Vermivora chrysoptera
040213		Ic	<u>Owl, northern saw-whet</u>	Aegolius acadicus

040422		Ic	Warbler, Wayne's	Dendroica virens waynei
070131		Ic	Isopod, Phreatic	Caecidotea phreatica
100176		Ic	Skipper, Arogos	Atrytone arogos arogos
020063		Ila	Toad, oak	Anaxyrus quercicus
040052		Ila	Duck, American black	Anas rubripes
040033		Ila	Egret, snowy	Egretta thula
040029		Ila	Heron, little blue	Egretta caerulea caerulea
040036		Ila	Night-heron, yellow-crowned	Nyctanassa violacea violacea
040114		Ila	Oystercatcher, American	Haematopus palliatus
040192		Ila	Skimmer, black	Rynchops niger
040181		Ila	Tern, common	Sterna hirundo
040320		Ila	Warbler, cerulean	Setophaga cerulea
040140		Ila	Woodcock, American	Scolopax minor
040203		Iib	Cuckoo, black-billed	Coccyzus erythrophthalmus
040105		Iib	Rail, king	Rallus elegans
040304		Iic	Warbler, Swainson's	Limnothlypis swainsonii
110353		Iic	SPIDER, FUNNEL-WEB	Barronopsis jeffersi

To view **All 785 species** [View 785](#)

*FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FP =Federal Proposed; FC=Federal Candidate; CC=Collection Concern

**I=VA Wildlife Action Plan - Tier I - Critical Conservation Need; II=VA Wildlife Action Plan - Tier II - Very High Conservation Need; III=VA Wildlife Action Plan - Tier III - High Conservation Need; IV=VA Wildlife Action Plan - Tier IV - Moderate Conservation Need

Virginia Wildlife Action Plan Conservation Opportunity Ranking:

a - On the ground management strategies/actions exist and can be feasibly implemented.; b - On the ground actions or research needs have been identified but cannot feasibly be implemented at this time.;

c - No on the ground actions or research needs have been identified or all identified conservation opportunities have been exhausted.

Anadromous Fish Use Streams

(7 records)

[View Map of All Anadromous Fish Use Streams](#)

Stream ID	Stream Name	Reach Status	Anadromous Fish Species			View Map
			Different Species	Highest TE*	Highest Tier**	
C20	Elizabeth river	Confirmed	3		IV	Yes
C92	James River 1	Confirmed	6		IV	Yes
P118	Nansemond river	Potential	0			Yes
P177	West Creek	Potential	0			Yes
P22	Bennett creek	Potential	0			Yes
P46	Chucktuck creek	Potential	0			Yes
P87	Knotts creek	Potential	0			Yes

Impediments to Fish Passage

(4 records)

[View Map of All Fish Impediments](#)

ID	Name	River	View Map
792	FERRY POINT DAM	TR-NANSEMOND RIVER	Yes
153	LAKE WHITEHURST DAM	TR-LITTLE CREEK	Yes
786	MATHEWS DAM	STREETER CREEK	Yes
769	TAYLOR DAM	BRAOD CREEK	Yes

Threatened and Endangered Waters

(11 Reaches)

[View Map of All
Threatened and Endangered Waters](#)

Stream Name	T&E Waters Species						View Map
	Highest TE*	BOVA Code, Status*, Tier**, Common & Scientific Name					
James River (0159673)	FESE	010032	FESE	lb	Sturgeon, Atlantic	Acipenser oxyrinchus	Yes
James River (0161280)	FESE	010032	FESE	lb	Sturgeon, Atlantic	Acipenser oxyrinchus	Yes
James River (0162401)	FESE	010032	FESE	lb	Sturgeon, Atlantic	Acipenser oxyrinchus	Yes
James River (0168508)	FESE	010032	FESE	lb	Sturgeon, Atlantic	Acipenser oxyrinchus	Yes
James River (0185340)	FESE	010032	FESE	lb	Sturgeon, Atlantic	Acipenser oxyrinchus	Yes
James River (0316799)	FESE	010032	FESE	lb	Sturgeon, Atlantic	Acipenser oxyrinchus	Yes
James River (0325335)	FESE	010032	FESE	lb	Sturgeon, Atlantic	Acipenser oxyrinchus	Yes
James River (0325345)	FESE	010032	FESE	lb	Sturgeon, Atlantic	Acipenser oxyrinchus	Yes
James River (0330870)	FESE	010032	FESE	lb	Sturgeon, Atlantic	Acipenser oxyrinchus	Yes
James River (0336863)	FESE	010032	FESE	lb	Sturgeon, Atlantic	Acipenser oxyrinchus	Yes

To view **All 11 Threatened and Endangered Waters records** [View 11](#)

Managed Trout Streams

N/A

Bald Eagle Concentration Areas and Roosts

are present.

[View Map of Bald Eagle Concentration Areas and Roosts](#)

(1 records)

BE CAR ID	Observation Year	Authority	Type	Comments	View Map
51	2006 - 2007	Center for Conservation Biology at the College of William and Mary/Virginia Commonwealth University	Winter Concentration Area	Eagle_use Low	Yes

Bald Eagle Nests

(19 records)

[View Map of All Query Results](#)

[Bald Eagle Nests](#)

Nest	N Obs	Latest Date	DGIF Nest Status	View Map
CP0301	12	Apr 25 2011	Unknown	Yes
CP0701	4	Mar 1 2008	UNKNOWN	Yes
CP0801	6	Feb 17 2010	UNKNOWN	Yes
IW0101	5	Jan 1 2005	HISTORIC	Yes
IW0401	15	Apr 18 2011	Unknown	Yes
NO0201	2	Jan 1 2003	HISTORIC	Yes
NO0301	10	Mar 1 2008	UNKNOWN	Yes

NO0401	3	Apr 10 2011	UNKNOWN	Yes
NO0801	4	Apr 10 2011	UNKNOWN	Yes
NO1001	2	May 20 2011	Unknown	Yes
NO1101	2	Apr 10 2011	Unknown	Yes
PM0001	5	Jan 1 2003	HISTORIC	Yes
PM0101	2	May 1 2001	HISTORIC	Yes
PM9901	6	Apr 24 2000	HISTORIC	Yes
SK0201	7	Apr 26 2006	HISTORIC	Yes
SK0401	15	Apr 18 2011	Unknown	Yes
SK0601	13	Apr 18 2011	Unknown	Yes
SK0901	5	Apr 18 2011	Unknown	Yes
VB0301	8	Mar 14 2007	UNKNOWN	Yes

Displayed 19 Bald Eagle Nests

Habitat Predicted for Aquatic WAP Tier I & II Species

(3 Reaches)

[View Map Combined Reaches from Below of Habitat Predicted for WAP Tier I & II Aquatic Species](#)

Stream Name	Tier Species						View Map
	Highest TE*	BOVA Code, Status*, Tier**, Common & Scientific Name					
James River (20802061)		010032	FESE	lb	Sturgeon, Atlantic	Acipenser oxyrinchus	Yes
James River (20802062)		010032	FESE	lb	Sturgeon, Atlantic	Acipenser oxyrinchus	Yes

James River (20802081)		010032	FESE	Ib	Sturgeon, Atlantic	Acipenser oxyrinchus	Yes
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Habitat Predicted for Terrestrial WAP Tier I & II Species

(16 Species)

[View Map of Combined Terrestrial Habitat Predicted for 16 WAP Tier I & II Species Listed Below](#)

ordered by Status Concern for Conservation

BOVA Code	Status*	Tier**	Common Name	Scientific Name	View Map
040120	FTST	Ila	Plover, piping	Charadrius melodus	Yes
040118	SE	Ia	Plover, Wilson's	Charadrius wilsonia	Yes
040110	SE	Ia	Rail, black	Laterallus jamaicensis	Yes
030013	SE	Ila	Rattlesnake, canebrake	Crotalus horridus	Yes
040379	ST	Ia	Sparrow, Henslow's	Ammodramus henslowii	Yes
040179	ST	Ia	Tern, gull-billed	Sterna nilotica	Yes
020044	ST	Ila	Salamander, Mabee's	Ambystoma mabeei	Yes
030067	CC	Ila	Terrapin, northern diamond-backed	Malaclemys terrapin terrapin	Yes
040422		Ic	Warbler, Wayne's	Dendroica virens waynei	Yes
020063		Ila	Toad, oak	Anaxyrus quercicus	Yes
040114		Ila	Oystercatcher, American	Haematopus palliatus	Yes
040192		Ila	Skimmer, black	Rynchops niger	Yes
040105		Iib	Rail, king	Rallus elegans	Yes
040186		IIla	Tern, least	Sterna antillarum	Yes
040187		IVa	Tern, royal	Sterna maxima maximus	Yes

050008			Shrew, Dismal Swamp southeastern	Sorex longirostris fisheri	Yes
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Virginia Breeding Bird Atlas Blocks

(24 records - displaying first 20)

[View Map of All Query Results](#)

[Virginia Breeding Bird Atlas Blocks](#)

BBA ID	Atlas Quadrangle Block Name	Breeding Bird Atlas Species			View Map
		Different Species	Highest TE*	Highest Tier**	
58044	Benns Church, CE	38		III	Yes
58042	Benns Church, NE	36		III	Yes
58046	Benns Church, SE	74		II	Yes
59036	Bowers Hill, SE	67		II	Yes
60021	Deep Creek, NW	27		IV	Yes
60056	Hampton, SE	37		II	Yes
60055	Hampton, SW	25		II	Yes
61033	Kempsville, CW	3		II	Yes
61032	Kempsville, NE	3		II	Yes
61031	Kempsville, NW	50		II	Yes
59022	Lake Drummond NW, NE	36		III	Yes
61043	Little Creek, CW	5		II	Yes
61046	Little Creek, SE	56		II	Yes
59056	Newport News North, SE	37		II	Yes
59055	Newport News North, SW	52		III	Yes

59044	Newport News South, CE	1	FTST	II	Yes
59042	Newport News South, NE	1		II	Yes
59046	Newport News South, SE	13		II	Yes
60044	Norfolk North, CE	1		II	Yes
60041	Norfolk North, NW	4		II	Yes

To view **All 24 Breeding Bird Atlas records** [View 24](#)

Public Holdings:

(10 names)

Name	Agency	Level
Ragged Island Wildlife Management Area	Va DGIF	
Fort Monroe Army Reservation	Dept. of the Army	Federal
Fort Norfolk	Dept. of the Army	Federal
Norfolk Naval Shipyard	Dept. of the Navy	Federal
Portsmouth Naval Medical Center	Dept. of the Navy	Federal
Craney Island NSC	U.S. Dept. of Navy	Federal
NAB Little Creek Naval Base	U.S. Dept. of Navy	Federal
U.S. Naval Air Station	U.S. Dept. of Navy	Federal
US Ammunition Depot	U.S. Dept. of Navy	Federal
Great Dismal Swamp National Wildlife Refuge	U.S. Fish and Wildlife Service	Federal

Summary of BOVA Species Associated with Cities and Counties of the Commonwealth of Virginia:

FIPS Code	City and County Name	Different Species	Highest TE	Highest Tier
093	Isle of Wight	421	FESE	I

550	Chesapeake City	491	FESE	I
650	Hampton City	397	FESE	I
700	Newport News City	416	FESE	I
710	Norfolk City	445	FESE	I
740	Portsmouth City	414	FESE	I
800	Suffolk City	532	FESE	I
810	Virginia Beach City	556	FESE	I

USGS 7.5' Quadrangles:

Chuckatuck
 Benns Church
 Lake Drummond NW
 Bowers Hill
 Newport News South
 Newport News North
 Deep Creek
 Norfolk South
 Norfolk North
 Hampton
 Kempsville
 Little Creek
 East of Hampton

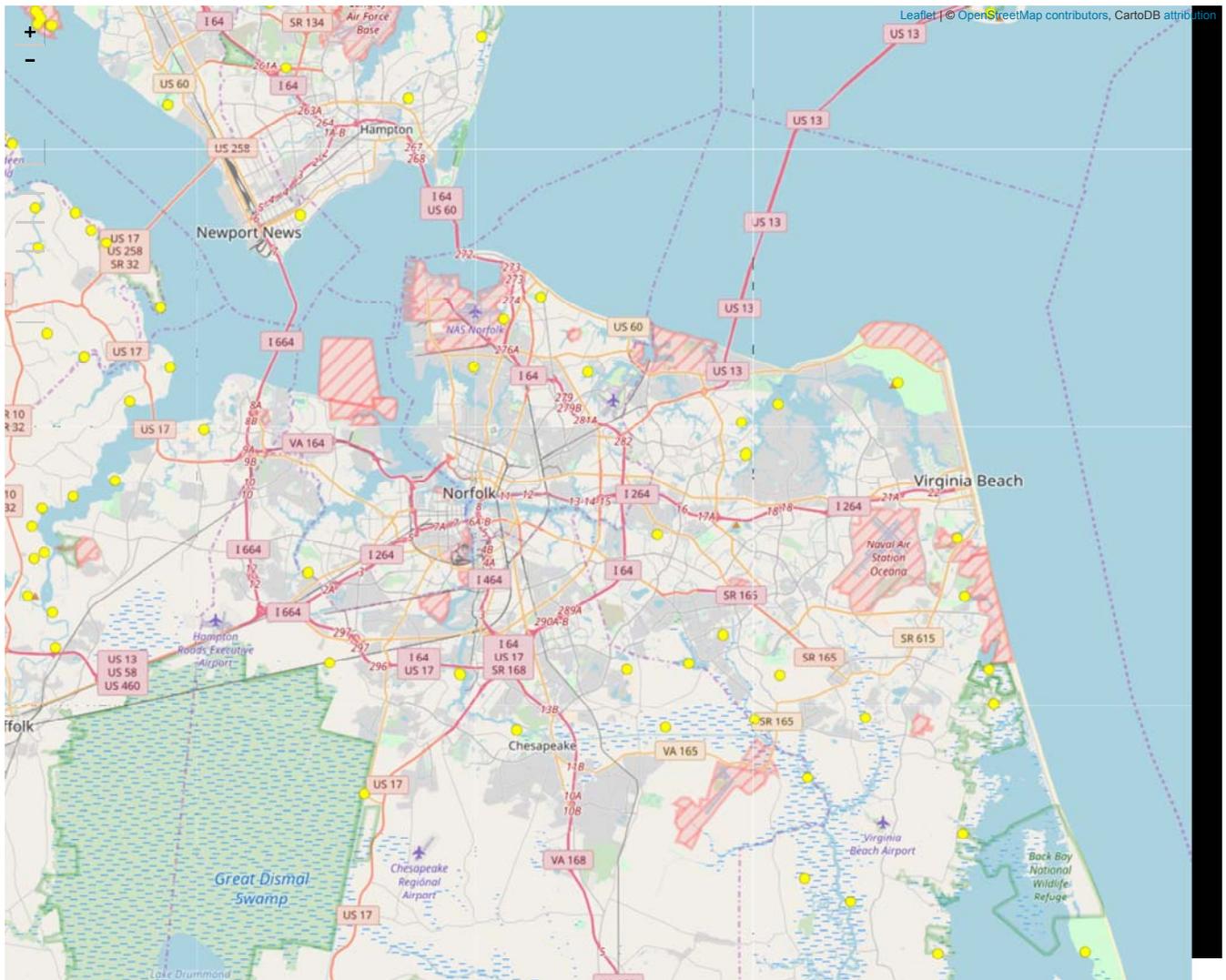
USGS NRCS Watersheds in Virginia:

N/A

USGS National 6th Order Watersheds Summary of Wildlife Action Plan Tier I, II, III, and IV Species:

HU6 Code	USGS 6th Order Hydrologic Unit	Different Species	Highest TE	Highest Tier
AS04	Dismal Swamp-Lake Drummond	87	FTSE	I

CB23	Southwest Branch Back River	78	FTSE	I
CB24	Lower Chesapeake Bay-Back River	91	FESE	I
CB26	Lower Chesapeake Bay-Little Creek	94	FESE	I
CB47	Lower Chesapeake Bay	78	FESE	I
JL42	Chuckatuck Creek	88	FTSE	I
JL43	James River-Cooper Creek	100	FESE	I
JL48	Nansemond River-Cedar Lake	83	FTSE	I
JL49	Nansemond River-Bennett Creek	93	FESE	I
JL50	Hampton Roads-Streeter Creek	91	FTSE	I
JL51	Southern Branch Elizabeth River-New Mill Creek	75	FTSE	I
JL52	Dismal Swamp-Dismal Swamp Canal-Big Entry Ditch	74	FTSE	I
JL53	Southern Branch Elizabeth River-Deep Creek	90	FTSE	I
JL54	Eastern Branch Elizabeth River	91	FTSE	I
JL55	Western Branch Elizabeth River	91	FTSE	I
JL56	Elizabeth River	75	FESE	I
JL57	Willoughby Bay	50	FTSE	I
JL58	Hampton Roads-Hampton River	84	FESE	I
JL59	Hampton Roads Channel	97	FESE	I



- Black Skimmer
- Black-crowned Night-Heron
- Brown Pelican
- Caspian Tern
- Cattle Egret
- Common Tern
- Double-crested Cormorant
- Forster's Tern
- Glossy Ibis
- Great Black-backed Gull
- Great Blue Heron
- Great Egret
- Gull-billed Tern
- Herring Gull
- Laughing Gull
- Least Tern
- Little Blue Heron
- Royal Tern
- Sandwich Tern
- Snowy Egret
- Tricolored Heron
- White Ibis
- Yellow-crowned Night-Heron
- Colonial Waterbirds 2008
- Zoom to Extents

A systematic aerial and ground survey of colonial waterbirds in coastal Virginia during the 2008 breeding season. More than 800 surveys were conducted of 446 colonies and 24 species.

[More info](#)

- Black Skimmer
- Black-crowned Night-Heron
- Brown Pelican

○ BALD EAGLE

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Caspian Tern
 Cattle Egret
 Common Tern
 Double-crested Cormorant
 Forster's Tern
 Glossy Ibis
 Great Black-backed Gull
 Great Blue Heron
 Great Egret
 Green Heron
 Gull-billed Tern
 Herring Gull
 Laughing Gull
 Least Tern
 Little Blue Heron
 Mixed Herons
 Royal Tern
 Snowy Egret
 Tricolored Heron
 White Ibis
 Yellow-crowned Night-Heron
 Colonial Waterbirds 2003
 Zoom to Extents

A systematic aerial and ground survey of colonial waterbirds in coastal Virginia during the 2003 breeding season. Nearly 550 surveys were conducted of 250 colonies and 24 species.

[More info](#)

Black Skimmer
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 Yellow-crowned Night-Heron

Osprey

OspreyWatch Nests

Zoom to Extents

OspreyWatch is a global community of observers focused on breeding osprey. Volunteers provide nest locations and activity reports during the breeding season.

[More info](#)

Chesapeake Bay Osprey Nests 1995-1996

Zoom to Extents

Osprey nests were surveyed by boat in the tidal portions of the Chesapeake Bay during the 1995 and 1996 breeding seasons. The Chesapeake Bay supports one of the largest osprey breeding populations in the world.

[More info](#)

Nightjars

Nightjar Survey Network Routes

Zoom to Extents

The U.S. Nightjar Network is a nationwide program where volunteers monitor the abundance and distribution of declining Nightjar species. On scheduled bright moonlit nights, participants conduct 10 roadside counts along a 9-mile route. At each point, the observer counts all Nightjars seen or heard during a 6-minute period.

[More info](#)

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VA Eagle Nest Locator